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# STUDIES OF THE REDUNDANT COLON*

BY FRANKLIN W. WHITE, M.D.†

THE study of the colon has been somewhat neglected in comparison with the intense research on the stomach and gall-bladder. The barium enema has not been used often enough. In routine X-ray examination in the past we have often looked at the twenty-four hour plate, seen the colon more or less filled and gone no further. In many clinics the barium enema has been used in only one-fifth or less of the gastro-intestinal cases.

The colon is worthy of investigation not only to detect the deformities of cancer, diverticulitis, or adhesions, but especially in cases of constipation to learn also the form, position and tone, the degree and mode of emptying, the types of peristalsis or segmentation. In this way important anomalies are discovered, one of the most interesting of which is the redundant colon.

Several of the members of this Association have recently studied this interesting condition and helped us to understand it. We are greatly indebted to the pioneer work of Mills[1], to the clinical studies of Kantor[2], to the statistical work of Larimore[3], and also to the observations of Bryant[4] on the length of the intestine.

The ensuing data are based on a series of 43 cases. They show that the redundant colon is not uncommon, but is very frequently overlooked, and early wrong diagnoses have been the rule. It is associated with, and we believe is the cause of, important abdominal symptoms, such as, colics, constipation, and flatulence. Formerly, it used to be discovered only as an occasional surprise at a surgical operation, and we had a wrong impression of the disease, as surgery discovered only the most severe cases. Now with the frequent use of the Roentgen ray we have a far better idea of its frequency, importance and diagnosis.

*Description.* The redundant colon is one that is too long for its owner, and is loosely attached, falling readily into loops and kinks. This is not a question of absolute length, as Bryant[4] has shown that there is considerable normal variation in the length of the colon; it is simply too long for the individual abdomen. The redundancy may be general; the whole colon may fit the abdomen badly, every part of it may be a little too long and too loose; or it may be local; there is simply a long sigmoid loop, a double loop at the splenic or hepatic flexure, or a very long transverse colon. Over two-thirds of the important loops are found on the left side of the colon, in the sigmoid, descending colon or splenic flexure. This looping and kinking of the colon may interfere with its function, and cause mild, moderate, or even very severe symptoms, which lead to confusion with other kinds of abdominal disease.

For reasons given below under *diagnosis*, we have not included in our series cases described as hyperrotation of the colon, or over-descent of the cecum, where the hepatic flexure is in the normal position, the right side of the colon long and straight, and the cecum low (fig. 8); nor cases of non-fusion of the cecum (mobile cecum) (fig. 10).

The cause of redundant colon is usually considered to be congenital, and Larimore[3] has recently shown in a large series of enemata given to babies that infants have variations in length and local redundancies of the colon which duplicate those found in adults. There is some evidence that it is occasionally acquired by overloading and stretching the sigmoid and transverse colon in chronic constipation.

*Frequency.* The condition is not rare. It is found in 4% to 5%, at least, of patients with chronic indigestion; in other words, about as frequently as achylia gastrica. In 1000 consecutive private gastro-intestinal cases in whom histories, physical examination, test meals and Roentgen examinations were recorded, we found 43 cases with varying degrees of redundancy of the colon: in 9, or about 1%, it was marked; in 19, or about 2%, it was moderate; and in 15, or 1.5%, it was mild. This 4.3 per cent. may fall considerably short of the number in which it was actually present, as barium enemata, which show the condition best, were only given in about one-third of the cases. Kantor[2], in a similar series of 668 cases, found 9.2% redundant colons. It is difficult to give absolute figures representing frequency, and they are likely to vary somewhat with different authors according to what they consider "redundancy". Bryant's[4] post mortem figures give 15% of unusually long colons in 160 cases. Our lower figures may be accounted for

*Read at the Annual Meeting of the American Gastro-Enterological Association, Atlantic City, May, 1927.

†For record and address of author see "This Week's Issue," page 824.

by the fact that many patients have few symptoms, or do not have a sufficiently careful examination to discover the redundancy during life.

Contrary to our expectation, about two-thirds of the group were men, namely 26 men to 17 women. The average or strong physique predominated; only about one-third of the group were of the asthenic or ptotic type. One was a professional athlete, another a naval officer. The redundant colon is by no means confined to weak people.

*Anatomy.* The position of the colon, and its loops, is related to the body form, the proportion of the size of the pelvis to the size of the upper

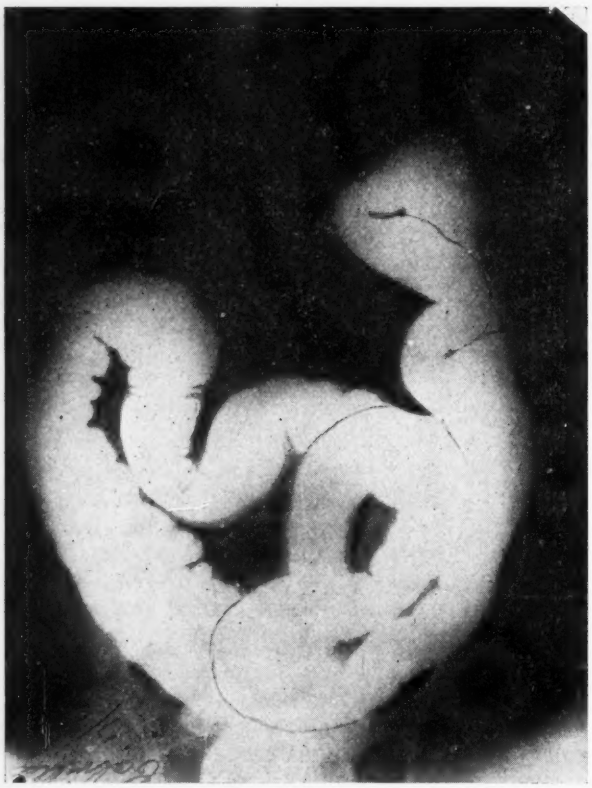

FIG. 1. Redundant colon, general type with long sigmoid, wavy ascending and transverse colon, with cecum low and median behind sigmoid loop.

abdomen. A narrow pelvis and a wide thorax give a vertical rectum and pelvic colon and a vertical sigmoid loop. A wide pelvis and narrow thorax give a lower pelvic colon with a transverse sigmoid loop. The position of the redundant folds or loop was on the left side in the majority of cases, namely 24, with 16 in the sigmoid and 8 in the splenic flexure; this included most of the serious cases. In 3 there was general redundancy of the whole colon, and in 16 it involved the hepatic flexure. Here the loops were small and the symptoms mild with a few exceptions, in one of which the hepatic flexure passed up between the liver and diaphragm. We wish to emphasize two points: first, the variability in the colon at different times, both in length of loops and position in the abdomen; and second, the remarkable deformities of the stomach, which were occasionally found. The loose attachment of the redundant colon accounts for the variation in position and size of the loop at different times. This diversity was particularly true of the long sigmoid, which at one time would coil up in the pelvis, at another time would reach over to the cecum, and again would run up parallel with the splenic flexure, or fill the whole mid abdomen.

In a few cases, extraordinary and variable deformities of the stomach and duodenum were produced by the pressure, twisting and pulling of the great colon loops, especially when the left upper quadrant was filled with gas and feces in large left sided loops of the sigmoid and splenic flexure. The stomach was rolled up, inverted or pushed to the right; sometimes the pylorus and antrum were hidden behind the body of the stomach; at other times there was hour glass formation, or large pressure defects resembling cancer. These deformities are so variable they are usually best observed by the fluoroscope. In no other condition of the stomach have I seen such peculiar and variable deformities, except in large diaphragmatic hernias. At times the stomach would empty slowly and large six-hour residues be found, which might be absent at the next examination.

Only a few of the singular Roentgen pictures can be included on account of lack of space. We have chosen them to illustrate general redundancy and redundancy in different portions of the colon, several long sigmoids and descending colons and transverse colon loops, a large hepatic flexure (figs. 1 to 7) and as a contrast a few examples of over-descent of the cecum and mobile cecum (figs. 8 and 10).

*Symptoms.* Function is much more important than anatomy. A loop is not a stricture: it is only a *potential* cause of trouble. It has a tendency to obstruction when it is overfilled, twisted, or kinked, and symptoms may be present only at intervals when these conditions are present. Pearcy and VanLiere[5] have shown the importance of reflexes from the colon. Experimental distension of the colon in man produced nausea, loss of appetite, inhibition of peristalsis and of normal tonus in the stomach, irregularity of pulse and changes in blood pressure; more marked distension caused vomiting.

There is no reasonable doubt that the redundant colon is an actual cause of dysfunction, and that from one-half to two-thirds of the cases have symptoms of obstructive or toxic type. These, in order of frequency, were constipation, abdominal pain or distress, flatulence, distension, vomiting, diarrhea, variable tumor; occasionally there was long delay in emptying the stomach. Other less definite symptoms, such as, headache, malaise, irritability, fatigue were often found; they may have been simply coincident.

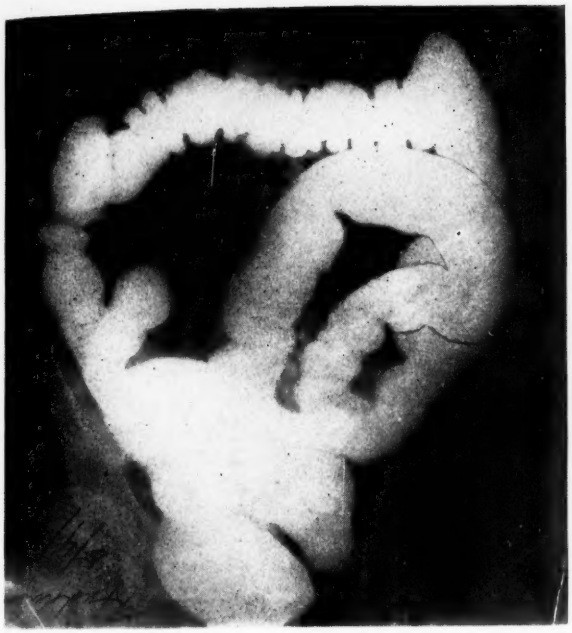

FIG. 2. Redundant colon with long sigmoid loop reaching up almost to splenic flexure.

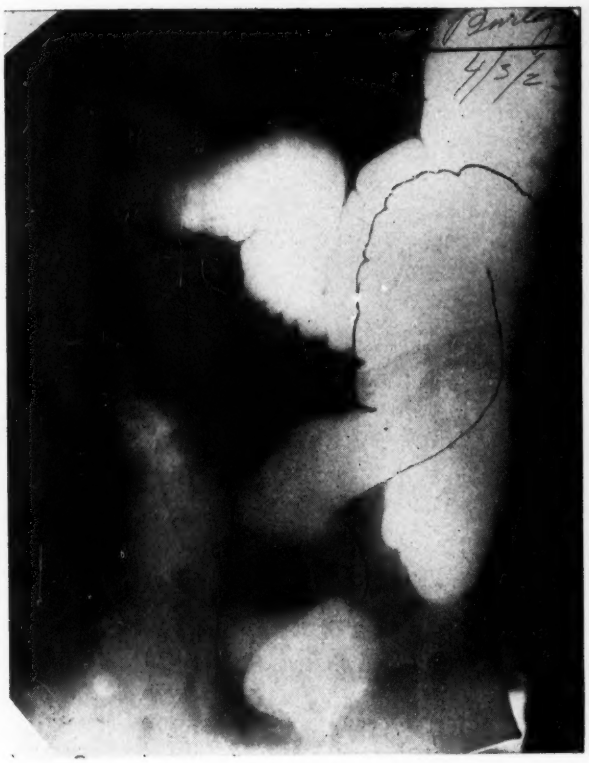

FIG. 4. Redundant colon with large sigmoid loop filling the whole left abdomen.

FIG. 3. Redundant colon with large sigmoid loop filling mid-abdomen.

FIG. 5. Redundant colon with very long sigmoid and descending colon loops, one of which passes in front of the transverse colon.

FIG. 6. Redundant colon with very long transverse colon.

FIG. 8. Hyperrotation of colon with overdescent of the cecum. Note the normal or high position of the hepatic flexure, the long descending colon and low cecum. (Type of case *not* included in our series.)

FIG. 7. Redundant colon with very large hepatic flexure (H) and long sigmoid loop which lies in front of cecum.

FIG. 9. Redundant colon with long sigmoid loop, long transverse colon and cecum in mid-abdomen.

The severity of these symptoms did not always correspond to the length of the loops, but rather to the degree of disturbance of colon function, the tone of the colon and abdominal wall, and the sensitiveness of the nervous system. In general, the longer the loop and the poorer the muscular tone, the more likely we were to find trouble. The symptoms like those of diaphragmatic hernia were easy to understand after X-ray pictures were taken, and the diagnosis established, but the lesion was practically impossible to diagnose definitely without the Roentgen ray. With single long loops, we found more violent attacks; and with general redundancy more chronic grumbling symptoms, such as, abdominal distress, flatulence and chronic constipation. One-third or more of the cases had no definite symptoms. We have latent cases of all ages now under observation. A series of case reports of especially interesting redundant colons were described by the author in the *Medical Clinics of North America,* 1925, volume 8, page 1611.

It seems remarkable that a congenital trouble can be so often latent. Our only explanation is that in good health the condition is compensated, and normal colon function maintained, much as organic heart disease is compensated; but under strain, fatigue, infection, or increasing age there is loss of muscular tone, compensation breaks and symptoms appear. Thus a condition of the colon present since birth may not develop symptoms till long afterward. It is very desirable to examine each colon carefully as we do each heart to discover any abnormality which may threaten health.

*Constipation* was the commonest symptom, being found in 30 cases, or about 70%. It usually was of many years' duration, and the patients were laxative and enema habitués. This is easy to understand on account of the mechanical hindrance offered to the emptying of the bowel. Occasional long intervals between stools of 3 to 7 days were quite characteristic. The stools were often small, hard and dry from long drying out in the colon; occasionally there was a sudden copious unloading of accumulated feces.

*Gas with abdominal distress* was found in 27 cases, or about 63%. We have considered this also as a partial obstruction symptom. It may also be due, as Kantor has pointed out, to poor absorption of intestinal gases by interference with blood supply to the colon, by twisting and kinking of the colon loops. It was often general, sometimes in the upper abdomen, sometimes in the lower. It was associated many times with cribbing and belching gas, and was naturally relieved by passing flatus or the use of enemata.

*Pain in the abdomen* has been an important symptom, present in 27 cases, or 62%. This has varied in degree from mild grumbling to violent colic, and has led to many wrong diagnoses. It has often been general, and sometimes variable in place, which is easily understood from the varying position of the colon loops, and varying degrees of pressure, twisting and obstruction. When local it has been twice as frequent on the left as on the right side. Occasionally an obstruction in the sigmoid may give pain or distress in the right side or right lower quadrant, by throwing back the fecal column into the cecum. Acute intestinal obstruction of the colon may occur rarely. Volvulus of the colon, which usually involves the sigmoid, is never found unless the colon is redundant. No case in this group has required operation for acute intestinal obstruction (volvulus), but one or two cases came dangerously near it.

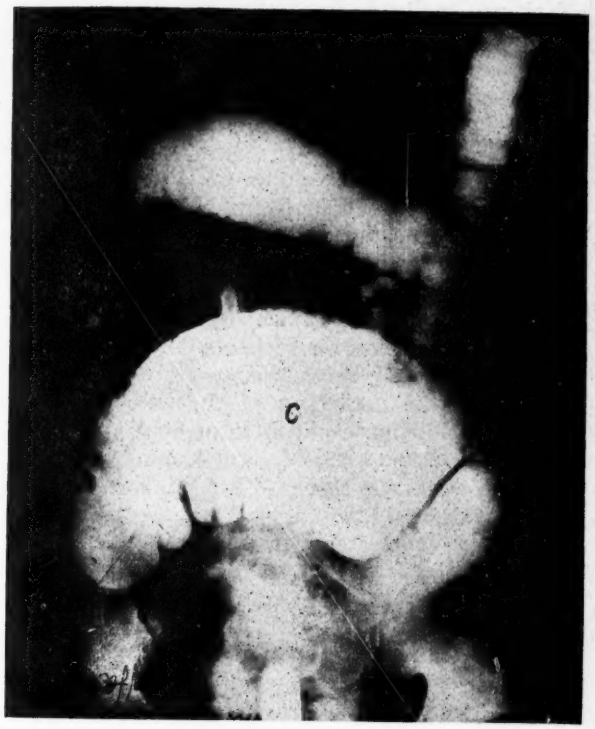


FIG. 10. Non-fusion of cecum or mobile cecum. The large cecum (C) occupies the middle of the abdomen. (Type of case *not* included in our series.)

*Vomiting and Diarrhea* have been occasional symptoms. Vomiting occurred in 12, and diarrhea in 4 cases of the group. These are not distinctive symptoms, but simply show the presence of abdominal disturbance and reversed or hurried peristalsis. The vomitus has not been characteristic, and the diarrhea was evidently due to colon irritation, or the unloading of a partly obstructed bowel. Mucus was occasionally present in the feces, but no blood.

The other vague symptoms, such as, headaches, malaise, irritability, fatigue, etc., may be due to partial intestinal obstruction and toxic absorption, or may be of purely nervous origin.

*Intermittent Tumor* was a feature in 3 cases, obviously due to colon loops, or obstructed colon filled with feces or gas. Serious tumors of the

bowel were suspected until their nature was discovered.

It is interesting to note how very closely this group of 43 cases compares in frequency, sex, relation to ptosis and asthenia, colon outline and frequency of symptoms with the series of 62 cases recently reported by Kantor[2]. We must be dealing with a definite entity with a fairly constant incidence and clinical picture.

*Diagnosis.* In not one case in our group has a positive diagnosis been made until after the Roentgen examination. The symptoms are logical and easily understood when once the diagnosis is made, but are of a general character and alone are not diagnostic. There is a close similarity in this respect with the rarer condition, diaphragmatic hernia of the stomach.

The Roentgen picture has already been sufficiently emphasized: the position, variability and extent of the loops of colon, the hepatic flexure sliding up between the liver and diaphragm, the gaseous distention of flexures and loops, the delay in emptying the colon and the occasional strange appearance of the stomach. Both barium meal and enema have their place in diagnosis, the meal to show the effect of the lesion on the emptying of the bowel, and the enema to fill the whole colon at once and outline the loops. Some redundant colons will show well on the plate taken 24 hours after a barium meal, but most do not, and all are much more clear and definite with the barium enema. The neglect of the barium enema in routine gastrointestinal examinations is one reason for the condition's being overlooked. The enema is often omitted because some definite pathology in the stomach, gall-bladder, esophagus, or appendix is discovered in the previous examination.

We are sorry to add anything to the already complex X-Ray routine, consisting of barium meal, gall-bladder plates, cholecystography, etc., but we urge the more frequent use of the diagnostic enema, especially in constipated persons and in those whose previous X-Ray examination was negative. If this is done, more redundant colons will be discovered, while if the enema is only occasionally used, some cases will be missed.

The diagnosis is easy in the well marked cases, but it is not always easy to draw the line between normal variations in the colon and mild redundancy. It is well to be conservative in diagnosis, and not include too many mild cases in this group. Too much importance must not be attached to a sigmoid loop a few inches longer than the average, or an hepatic flexure, or a descending colon that is a little wavy. There is considerable normal variation in the length of the colon, as shown by Bryant's figures already quoted. My impression is that there are many moderate and mild, and some severe cases.

An objection may be made to diagnosis by barium enema, in that it is not physiologic to fill the colon from below, and that we may have distended it and made it appear abnormal; but our experience leads us to believe that we are not dealing with artifacts, but with an actual condition, which corresponds frequently with changes found by the barium meal, and which is a frequent cause of colon malfunction and disagreeable symptoms.. The same low pressure is used for all barium enema work, though in redundant cases the usual quart may fill only the lower colon, and two, three or four times the usual amount may be needed to outline the whole colon.

The painful attacks have led to much confusion with other kinds of abdominal disease; in fact, early wrong diagnoses have been the rule in our series. Two cases had an operation for supposed appendicitis. Two others had been diagnosed as abdominal cancer. In others gall-bladder disease, gastric and duodenal ulcer, diverticulitis and Dietl's crises had been considered. In several others the intermittent fecal tumors had caused confusion.

It is, of course, very important to avoid wrong diagnoses of other lesions which produce colics, abdominal distress, pain, or tumor and thus avoid unnecessary exploratory operation, and the removal of harmless organs. As previously stated, in no other disease are such strikingly peculiar and variable deformities of the stomach seen, except in diaphragmatic hernia.

We wish to avoid over-classification of the anomalies of the colon, but there are two conditions of the right colon which we have not included in our series, as their incidence and symptomatology appear somewhat different. These are: (1) hyperrotation of the colon, over-descent of the cecum, or low cecum, and (2) nonfusion of the cecum or mobile cecum.

In low cecum cases (which should not be confused with ptosis of the cecum), the embryologic rotation of the colon called "descent" is excessive, and instead of the cecum coming to rest in the right iliac fossa, it continues on into the pelvis, a condition called "hyperrotation" or "overdescent". We have the hepatic flexure in the normal or high position, a long straight or slightly curved ascending colon and a low cecum (fig. 8). A group of these cases studied by Kantor showed a large majority of females (79%), and asthenics (54%), with vomiting in 59%, which is quite the reverse of our redundant colon series with females 40%, asthenics 33% and vomiting 28%.

In the mobile cecum cases, the ascending colon, instead of being fixed to the posterior abdominal wall, is provided with a mesentery which leaves the cecum abnormally mobile and often large and atonic (fig. 10). In some cases the mobile cecum is the only anomaly; it is not fair to class such cases with redundant colons simply because the cecum is very mobile. Often the mobile cecum is combined with general redundancy, the cecum is loosely attached and the rest of the colon also (compare figs. 9 and 10).

It seems possible that the difference between the usual redundant colon and "megacolon" may sometimes be simply one of degree. Some cases of megacolon may be only an extreme congenital type of redundant colon discovered early in life on account of serious dysfunction causing marked symptoms. The colon is always greatly lengthened, folded and atonic, and about one-third of the cases of megacolon show involvement of the colon in its sigmoid portion only.

*Treatment.* A glance at some of the Roentgen pictures will show that we can never expect to make such colons anatomically normal, but we can often restore normal function, and make the patient symptom free. There is always an accidental feature in these cases; some of the patients with large and long loops may go for long periods without chronic symptoms, or an acute attack.

We have treated the bowel gently and let it alone as far as possible. Stimulating laxatives and cathartics have usually added to the irritation and spasm, and often made matters worse. Instead of these, we have lubricated the bowel from above and below by mineral oil by mouth and six ounce oil injections at bedtime which were retained if possible over night. Enemata can often be avoided, but we occasionally use bland enemata of bicarbonate of soda, 2 teaspoons to the quart of warm water, which is less irritating than the usual soapsuds. Some cases may require a more stimulating enema, a bland one is "lost in the bowel" and does not return.

A bulky diet is essential, including plenty of cooked fruit pulp and mashed vegetables, which, when there is much irritation of the bowel, are often better than coarser food, such as, bran and raw vegetables. Rest and tonic measures with abdominal exercises and massage are useful, and occasionally sedatives and belladonna. Medical treatment has greatly improved a majority of the patients, especially those in whom the condition was of mild and moderate grade, and even some in whom it was severe. The unloading and untwisting of the colon loops, the avoidance of irritation, and the recovery of muscular tone has often improved the anatomy and function of the bowel to a surprising degree.

No surgery, such as fixation of the colon or resection of loops, has been attempted in this group, as it seemed likely to make matters worse. One large cecum was plicated with rather poor results. A twist of the sigmoid (volvulus) with serious acute obstruction requires immediate surgery.

*Summary.* The redundant colon is a definite entity which is fairly common, and quite frequently overlooked, and early wrong diagnoses are the rule. It is more common in men than in women, and in persons of vigorous physique. The commonest symptoms are constipation, abdominal distress or pain, flatulence and distension. About one-third of the cases have no definite symptoms. It is important to remember the redundant colon when general abdominal symptoms or painful attacks are present in order to avoid wrong diagnoses of other lesions which produce similar symptoms. No other disease causes such peculiar variable deformities of the stomach, except diaphragmatic hernia. A barium enema shows the lesions best and if the enema is only occasionally used, some cases will be missed. Medical treatment will cause great improvement in the majority of cases.

I wish to acknowledge my indebtedness to Dr. Lawrie B. Morrison of Boston for valuable suggestions and for several of the illustrations.

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# RABIES

## The Treatment of Wounds and Prevention of the Disease*

BY M. J. ROSENAU, M.D.†

WE know enough about the cause and mode of propagation of rabies to control and even to prevent the spread of the infection; in fact, the disease has been entirely eliminated from England, Scandinavia and other insular and peninsular countries. Through the enforcement of a strict quarantine, rabies has been kept out of Australia. Furthermore, the prompt and proper treatment of wounds inflicted by mad animals will greatly diminish the likelihood of the development of rabies. Finally, thanks to the genius of Pasteur, we are able to immunize and protect those who are bitten.

The cauterization of the wound and the Pasteur prophylactic treatment are efficient preventive measures for the individual, but they are not the true and best methods of controlling and preventing the disease. We should not wait until persons are bitten by mad dogs, but should direct measures towards the dog. Rabies is primarily a disease of dogs, secondarily of man.

*This article, written at the request of Dr. George H. Bigelow, Commissioner of Public Health, is designed to bring up to date and emphasize two of the important practical points; namely, the correct treatment of the wounds and the prevention of the disease in accordance with recent advances. Part of this article is abstracted from the chapter on Rabies in my book "Preventive Medicine and Hygiene," (fifth edition) published by D. Appleton and Company, to which the reader is referred for further details.

†For record and address of author see "This Week's Issue," page 824.

It is kept alive in nature mainly by the dog and the dog family. The stray pariah dog causes most of the trouble in our communities. The control of the disease demands that laws concerning the compulsory impounding of all stray animals and the proper supervision of all licensed dogs be strictly enforced. The problem cannot be settled locally, but requires nation-wide action, for one locality or state which might free itself of this disease would soon become reinfected from neighboring states.

Rabies is remarkable in several particulars, especially the period of incubation and high mortality. The period of incubation is more variable and more prolonged than that of any other acute infection. Rabies is practically the only disease in the entire medical repertoire which is almost invariably fatal after symptoms once begin. The mortality is practically 100 per cent. Recovery either in man or animals is so rare as to be a scientific curiosity and a subject of much discussion. Effective preventive measures must therefore begin as soon as practicable after the infliction of the wound.

### LOCAL TREATMENT OF THE WOUND

We have a satisfactory and effective method of preventing rabies, provided the wound produced by a rabid animal be *promptly* and *properly* treated. Treatment consists in cauterizing the wound with "fuming" or strong nitric acid, making certain that the acid is applied to every part of the surface. This matter of the prompt and proper cauterization of wounds produced by the bites of animals is not well understood, and therefore is emphasized on account of its prophylactic value. The technic follows.

#### *Cauterization with Nitric Acid*

Wounds produced by the bite of an animal, in which there is any possibility of rabies, should at once be cauterized with "fuming" or strong nitric acid. The acid is best applied with a glass rod very thoroughly to all parts of the wound, care being taken that pockets and recesses do not escape. Punctured wounds should be laid open to allow proper cauterization. Experiments in my laboratory indicate the importance also of cauterizing the edges of the skin. Thorough cauterization with nitric acid reduces the danger of wound complications, and experience demonstrates that wounds *promptly* and *thoroughly* cauterized with nitric acid are seldom followed by rabies. Experiments under my supervision (unpublished) indicate that practically all guinea pigs may be saved by prompt application of nitric acid, that its effectiveness decreases with time, but that it is still partially protective up to forty-eight hours.

Experience here and elsewhere indicates that it is still the common practice timidly to cauterize wounds with substances that we know are not effective, such as nitrate of silver (lunar caustic). It has been demonstrated conclusively that nitrate of silver coagulates the surface albumin and does not penetrate, and therefore does not protect. We have demonstrated to our entire satisfaction that even such strong caustic and germicidal substances as pure carbolic acid, corrosive sublimate, strong formaldehyde solution and permanganate of potash are only partially effective. Even the actual cautery thoroughly applied does not give as good results as nitric acid.

Just why nitric acid has this special selective action in destroying the virus of rabies in wounds is not entirely clear. On account of its diffusibility and penetration, it may be considered almost specific for rabies.

Physicians are inclined to withhold their hand when it comes to cauterizing wounds of the face with nitric acid because they fear scarring. A wound on the face or anywhere else will leave a scar whether cauterized or not, and there is little if any additional scarring due to cauterization with nitric acid.

It is well known that wounds of the face and other parts of the body where the naked skin is exposed to bites are especially liable to be followed by rabies. The reason why bites of the arms, legs and body are less dangerous is that the virus is apt to be wiped off when the teeth of a mad animal bite through the clothing. Furthermore, it is well known that the liability to rabies increases not only with the character, severity and number of the wounds, but with their location, the most dangerous being those in regions where the nerve supply is rich.

### SUSCEPTIBLE ANIMALS

Every mammal is susceptible. Even birds may contract the disease. It is most common in dogs, but it also occurs frequently in wolves, jackals, foxes and hyenas. Rabies in cats and skunks is comparatively rare and but occasionally transmitted to man. Cattle, sheep and goats are infected relatively in about the same degree. It is less common in horses. Swine contract the disease less frequently than other domestic animals.

Rabies is perpetuated in civilized communities almost exclusively by the domestic dog and to a small extent by wild animals of the dog family.

### PERIOD OF INCUBATION

From the standpoint of prevention it is fortunate that the period of incubation of this disease is prolonged. This period varies from fourteen days to a year or more. Such prolonged periods of incubation indicate latency. The average period is as follows: Man, forty days (apt to be shorter in children or following bites on the face); dogs, twenty-one to forty days; horses, twenty-eight to fifty-six days; cows, twenty-eight to fifty-six days; pigs, fourteen to twenty-one days; goats and sheep, twenty-one to twenty-eight days; birds, fourteen to forty days.

The period of incubation depends upon the amount and virulence of the virus and the nature and site of the wound, especially with reference to the nerve supply. It requires about fifteen days, counting from the last injection, to induce an active immunity to the disease by means of the Pasteur preventive treatment. There is, therefore, usually sufficient time, if started early, to prevent the development of symptoms. But, there is no time to lose and delays are hazardous.

It is probable that the prolonged and variable period of incubation is due in part to the fact that it takes time for the virus to travel along the nerves to the central nervous system, and that it may there remain dormant (latent) until conditions favor multiplication.

## PROPHYLACTIC TREATMENT

Pasteur announced his prophylactic method on December 6, 1883, at the International Congress at Copenhagen, and on February 24, 1884, he laid before the French Academy the details of his experiments and results. For many years the classic Pasteur method was used, but in time it was modified and improved in several particulars. In 1911, Lieutenant-Colonel Sir D. Semple[1] published the results of his studies with fixed virus killed with phenol. This dead virus is injected subcutaneously daily for fourteen days. The method was first tried out in India with good results. Its simplicity and relative safety made an appeal which caused it to grow in popularity and it is rapidly becoming the method of choice. In view of the fact that it has only recently been introduced into this country, a brief description of the method and its results follow.

### *The Semple Method*

The material for the prophylactic injections is prepared from the fresh fixed virus in the brain, medulla and spinal cord of rabbits. This is ground in sterile salt solution containing one per cent. carbolic acid, strained through fine muslin, and kept at 37°C. for 24 hours. At the end of this period the virus is dead—at least Semple found that it is not infective when injected into susceptible animals. The material is now diluted with an equal volume of sterile normal saline solution. This final dilution contains four per cent. of the dead virus in 0.5 per cent. carbolic acid normal saline solution. The dose is 2.5 cc. injected into the subcutaneous tissues of the abdominal walls once a day for 14 days.

The advantages of the Semple method consist first of all in its efficiency and the relative infrequency of paralytic complications. It is meeting with favor, furthermore, because it is economical and simple, and the virus may be preserved for shipment. Gloster and Taylor[2] studied the keeping properties of carbolized antirabic vaccine and found that it retains a high degree of immunizing power for a period of two months from date of manufacture, no difference being found in its protecting value whether kept in cold storage or at the shade temperatures of Rangoon with monthly mean temperatures varying from 86.2°F. to 87.4°F. and a maximum day temperature of 99.7°F.

Many thousands of persons have been treated by the Semple method and, so far as records are available, with satisfactory results. It is often stated that the Semple method is quite as efficient, safer and simpler than any other modification of the Pasteur prophylactic treatment. This comparative statement deserves critical analysis, for the figures are not statistically comparable: they are obtained in different countries, at different times; recorded and edited in accordance with different plans. In some localities and at certain times rabies is much more virulent than in other localities and at other times. Even when all these factors are considered, the results of the Semple method remain favorable.

The Health Organization of the League of Nations recently held an international conference on rabies, the results of which have been published in a supplement to the *Annales de l'Institut Pasteur*, 1928, which has just arrived. This report contains the details concerning the subject of rabies brought up to date. There are recorded 5,035 cases treated by the Semple method, with 8 deaths, only one of which is described as a failure. Table I gives results of treatment.

Table II gives the incidence of paralysis following treatment by the Semple method.

Dr. G. W. McCoy, Director of the Hygienic Laboratory of the U. S. Public Health Service, writes me under date of April 20, 1928: "A couple of years ago we collected data on the Semple method and found it had been used at that time in perhaps twenty thousand cases in the United States with an exceedingly low failure rate and a complete absence of cases showing paralysis. Since then the method has become even more popular and we still have to hear of an authentic case of paralysis although we have heard of a few failures to prevent rabies."

It is stated in the *Weekly Bulletin of the Department of Health of New York City*, November 12, 1927, that "further tests are to be made on a series of guinea pigs as to the efficacy of the Semple vaccine. The results of immunological tests on a small series of guinea pigs show it to be at least as good if not better than vaccine produced by the Pasteur Method." A letter from Dr. Anna W. Williams, dated April 27, 1928, reports the following results with vaccine prepared by the Semple method in the laboratory of the New York City Health Department:

2 cc. of a 4 per cent. emulsion begun August 23, 1926. Cases treated to March 15, 1928, 4,841—over one-half as many as in the 13 previous years.

TABLE I

RESULTS OF TREATMENT BY THE SEMPLE METHOD[3]

| Antirabies Stations | Injections | Annual Average Number of Persons Treated | Mortality Percentage |
|---|---|---|---|
| Bombay (Inst. Haffkine) | 14 days treatment | 2,875 | 2.12-0.11 |
| Calcutta | 14 " " | 5,000 | 4.7-0.5 |
| Shanghai | 15 " " | 130 | 7.7-1.2 |
| Columbus (Ohio) | 15 " " | 681 | |
| Coonoor (British India) | 14 " " | 3,131 | 1.075-0.75 |
| Cuba (Inst. Santa Clara) | 14 " " | 150 | 0 |
| Hongkong | 12 " " | 66 | 0 |
| Jerusalem | 14 " " | 858 | 2.5-0.60 |
| Kasauli (British India) | 14 " " | 4,030 | 1.76 |
| Lisbon (Inst. Camara Pestana) | 15 " (40 inj.) | 1,669 | 1.75-0.11 |
| Lwow (Poland) | 20 " treatment | 1,338 | 0.059 |
| Philadelphia | 14 " " | | 0.5 |
| Rangoon (Dutch East Indies) | 14 " " | 466 | 0.22 |
| Rome | 15-25 days | 496 | 0.16 |
| Schillong (British India) | 14 " | 1,503 | 0.41 |

TABLE II

PARALYSIS FOLLOWING TREATMENT BY THE SEMPLE METHOD[3]

| Location of Institute | Name of Director | Number of Cases of Paralysis | Number of Wounds Treated | Percentage |
|---|---|---|---|---|
| Shanghai | Jordan | 0 | 465 | 0 |
| Kasauli | Cunningham | 3 | 84,844 | 0.035 or 1/28,281 |
| Shillong | Hodgson | 0 | 13,532 | 0 |
| Rangoon | Taylor | 0 | 5,125 | 0 |
| Calcutta | — | 0 | 11,083 | 0 |
| Bombay | Morison | 0 | 11,000 | 0 |
| Santa-Clara (Cuba) | Lorenzo | 0 | 584 | 0 |

One case of paralysis reported a few weeks ago recovering.
Deaths after 15 days—2; mortality, 0.04.
Patients bitten by rabid animals, 1467.
Corrected mortality, 0.14.

Dr. Williams writes further: "The following is a summary of reasons in favor of using the Semple vaccine.

"It retains its maximum potency and powers of immunization for a period of at least three months away from light and in an icebox.

"The vaccine contains the smallest amount of nerve tissue commensurate with efficient treatment, and thereby are avoided the so-called post-treatment paralyses which occasionally follow certain other methods of treatment.

"The dosage is more accurate than the attenuated cord method since the cords vary very much in size. In a large cord desiccation and attenuation proceed more slowly than in a small cord. For this reason, the virulence of various cords dried for the same number of days will vary.

"The Semple vaccine is less costly. The average spinal cord will measure about eight inches, producing twenty doses at six cc. each, or sixty doses at two cc. each as used in the Pasteur method. The average rabbit brain weighs about seven grams, producing one hundred doses of two cc. of a four per cent. emulsion (one hundred and sixty doses five cc. of one per cent. emulsion).

"Semple vaccine is more convenient as it may be produced in quantity and the whole treatment sent in one shipment. This will greatly reduce the necessary clerical work and the possibility of errors due to non-delivery by mail.

"All doses of the Semple vaccine are the same regardless of age, sex, severity of the bite or location of the wound. The fourteen-dose treatment is regarded as sufficient for all types of cases.

"Brain matter is said by Nitsch to be ten times more virulent than spinal cord. In using brain we are giving a large proportion of specific antibody-producing substance and a smaller one of the useless, probably harmful, nervous tissue than is given in methods of cord immunization."

Dr. A. B. Wadsworth, Director of the Division of Laboratories and Research of the State Department of Health of New York, writes me: "Since the Semple method was adopted in November, 1926, we have reports of 148 persons who received treatments. In no case was paralysis reported or development of rabies, following treatment. The same holds true of the records of the Division of Communicable Diseases, which

include all persons treated in the State, exclusive of New York City."

Lieutenant-Colonel J. W. Cornwall[4] of the Pasteur Institute of Southern India, Coonoor, Madras, presented to the congress in Strasbourg the following statement concerning results. The Institute has been working for 16 years and 28,898 persons have received the Semple treatment.

| | | |
|---|---|---|
| Total number treated | 28,898 | |
| Died during treatment | 45 | or 0.15 per cent. |
| Died less than 15 days after completion of treatment | 78 | or 0.27 per cent. |
| Died more than 15 days after completion of treatment | 200 | or 1.70 per cent. |
| Total mortality | 323 | or 1.11 per cent. |
| Percentage of failures | 0.7 | |

### *When to Give the Prophylactic*

It is sometimes difficult to decide whether the prophylactic treatment should be given. Treatment causes sufficient personal inconvenience, not to speak of the danger (however slight) of paralysis, to avoid advising it if unnecessary. In many cases it is impossible to discover whether the dog that inflicted the bite is mad or not. The rule in cases of doubtful exposure is to advise the treatment.

Persons who apply for treatment of dogbites fall into one of the seven following categories with reference to the Pasteur prophylactic or one of its modifications, such as the Semple method:

1. The dog is mad: In this case, begin treatment *at once.*

2. The dog shows suggestive symptoms: Give the treatment at once. In communities having skilled laboratory facilities wait for diagnosis, provided this is done promptly.

3. The dog is not mad: Observe it carefully for ten days and if no symptoms develop there is no danger of rabies in the person bitten. The treatment is therefore unnecessary. (The dog may nevertheless develop rabies after ten days and if it has been bitten by another dog should be kept in quarantine for six months.)

4. The dog is not identified: This is a common occurrence, especially with children. The rule in such cases is to advise the prophylactic treatment, except in regions known to be free of rabies.

5. Exposure to saliva: Persons not infrequently apply for advice giving the following history: They have not been bitten, but they have been licked on the hands and face by a dog that subsequently was discovered to have the disease. Persons are sometimes similarly exposed by washing the mouth of a rabid horse. In these cases the important question is whether there were fissures or abrasions in the skin at the time. There may be little wounds in the skin not evident to the naked eye. It is possible to infect animals by rubbing the virus on the shaved skin. The rule is therefore to advise the protection which the treatment affords in persons thus exposed.

6. In psychoneurotic patients with a distressing phobia of rabies, it may afford comfort to give a mild course of treatment as much for its psychotherapeutic effect as for specific immunity.

7. Fomites: The question is often asked whether the disease may not be contracted from contact with virus in saliva upon floors, on playthings and other objects. The situation arises with a rabid dog in the house, where children may be exposed in this indirect manner. While theoretically possible, the danger is small; in fact, I have never heard of a case contracted in any such way.

The virus is not infective by the mouth.

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## BILATERAL CAVERNOUS SINUS THROMBOSIS

### Nasal and Eye-Lid Infection

BY JOSIAH E. QUINCY, M.D.*

ON October 8th last, the writer was called in consultation to see a man aged 39. The history was that of a hordeolum on the left lower lid two weeks previously, which healed under a physician's care. One week following, there appeared a hordeolum on the right lower lid, accompanied by a small furuncle on the lateral wall of the right nasal vestibule. There was slight pain over the right side of the face. The temperature had been 103° for three days.

Examination revealed a well nourished white man with a striking right-sided facial infection, but no line of demarcation. The right eye-lids were so nearly shut by edema that voluntary opening was impossible. On separating the lids, the eye-ball was voluntarily immovable, with considerable intra-ocular tension. The nasal mucous membrane was red, dry, glistening and swollen, particularly on the right side.

After shrinking the nasal mucous membrane with a 4% solution of cocaine and epinine, there was no visible pus, and no evidence of localized furunculosis or septal infection. The throat was dry and red throughout. The ears were negative; the neck was not stiff. The superficial and deep reflexes were

*For record and address of author see "This Week's Issue," page 824.

normal. During the course of the examination the patient had an attack of projectile vomiting, which was the first one.

Realizing the possibilities of the case, the patient was admitted to the hospital immediately and local measures for treating erysipelas ordered, namely, saturated solution of magnesium sulphate compresses, adrenalin inhalant nasal spray, sponge bath for temperature, forced fluids, and erysipelas precautions. The temperature remained at 103° to 104° the next two days, and there was no sign of improvement.

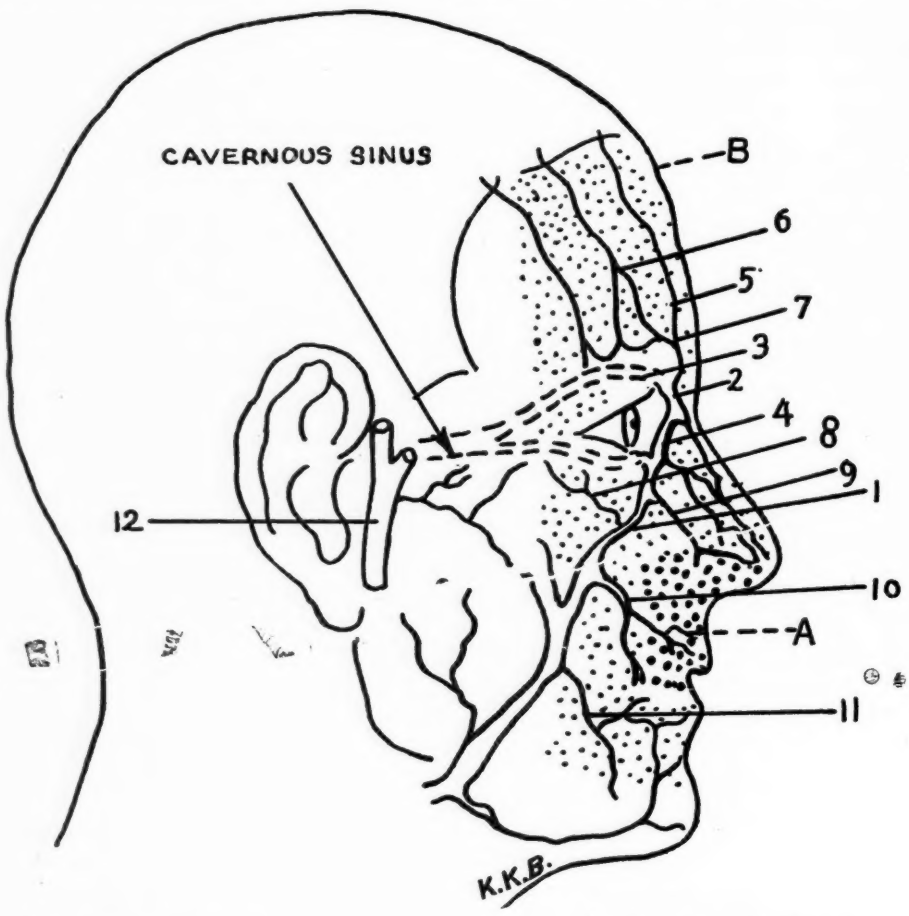
On the fourth day, October 11, 20 c.c. of Squibb's erysipelas antitoxin were given intramuscularly. A gradual drop in temperature to 101° followed this injection. The pulse and respirations remained in proportion to the temperature. At this time there was some redness and swelling of the left eye-lids; though the patient could open them voluntarily, the palpebral fissure was markedly narrowed. The bridge of the nose remained clear.

October 12, the same dose of antitoxin was given intramuscularly. There was a sudden rise in temperature that night. In the afternoon there was a definite stiff neck, positive Babinski and Kernig signs on both sides.

Consultants agreed that we were dealing with a cavernous sinus thrombosis of acute fulminating type, caused by infection of the eye-lids and possibly furuncle of the right side of the nose with an ascending infection through the nasal and angular veins to the opthalmics, thence to the cavernous sinus on the right side, and by continuity to the left side. There was no question about there being some involvement of the meninges at this time. A blood culture was taken which showed staphylococci with rare streptococci. The fundi and spinal fluid were not examined. The urinalysis was negative. No hope was given for recovery. The patient died the following morning, October 13, at 3.45, five days after we had first seen him, and eight days after the onset of high temperature. The report on the autopsy done by Dr. Tracy B. Mallory at the Massachusetts General Hospital is quoted in part as follows:

*Head:* The calvarium was removed without difficulty. The longitudinal, lateral and petrosal sinuses were negative. The dura was not thickened. The pia was injected but showed no exudate. The vessels in the Circle of Willis were negative. The right cavernous sinus was filled with blood-tinged pus. This extended forward to the beginning of the opthalmic vein. The left cavernous sinus contained a small thrombus and also a small amount of purulent exudate. The middle ears were negative. The ethmoidal cells, frontal sinuses, and sphenoidal antra were negative.

*Brain:* Weight, 1345 grams. Except for moderate congestion it was entirely negative.




1. Anterior Facial Vein
2. Angular Vein
3. Superior Ophthalmic Vein
4. Inferior Ophthalmic Vein
5. Frontal Vein
6. Supraorbital Vein
7. Superior Palpebral Vein
8. Inferior Palpebral Vein
9. Nasal Vein
10. Superior Labial Vein
11. Inferior Labial Vein
12. Temporal Vein

A. Heavy dotted area around nose and upper lip is the critical area of face infection.
B. Light dotted area is danger zone for face infection.

(From article by Wm. Hunton of N. Y. "Danger of infection about the face." Annals of Surgery, 85:104-106, Jan., 1927.)

*Bacteriologic Examination:*—Smear from right cavernous sinus showed streptococci and staphylococci.

Left sinus: culture showed staphylococcus aureus.

Right sinus: culture showed staphylococcus aureus and streptococcus hemolyticus (rare).

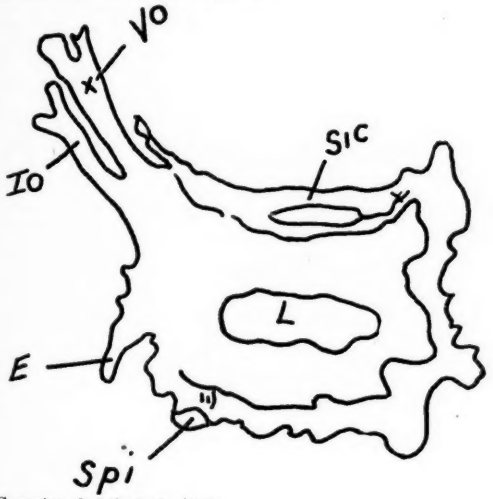
Blood culture: B. coli. Staphylococcus aureus (rare).

No histological slides were made.

*Comment:* This is nearly a reduplication of Eagleton's case no. 11 in his report of 25 cases of cavernous sinus thrombosis, in which there was a stye on the eyelid, but with slight symptoms until an embolic occlusion of the opthalmic vessels twelve hours before death. There are many cases of cavernous sinus infection reported in the literature (see bibliography), but few caused by infection of the eye-lid and furuncle of the nose. Turner and Reynolds report a case in which the primary source was a furuncle situated on the inner aspect of the right ala nasi. At the Massachusetts Eye and Ear Infirmary there has been only one such case in the past five years. Autopsy showed pus in the right cavernous sinus. An interesting fact is the usual extension of the infection from the homogeneous side to the opposite cavernous sinus by continuity through the anterior communicating sinus.

The following diagram will serve to illustrate the path of infection:

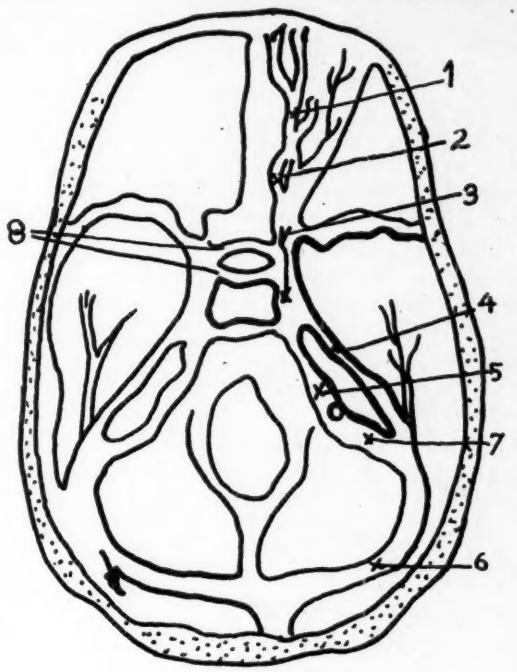
The following is a sketch of a photograph of a dissected specimen, showing the cavernous sinuses, and their connections with each other, forming the so-called circular sinus, at the base of the skull in the anterior fossa.




VO Superior Ophthalmic Vein
IO Inferior Ophthalmic Vein
SIC Anterior Intercavernous Sinus
L Position of Pituitary Body
E Emissary Vein leading thru foramen ovale into pterygoid plexus
SPI Inferior Petrosal Sinus

(From Journal of A. M. A., 87:1088-1092, Oct. 2, 1926)

The following shows the sinuses at the base of the skull. Note particularly the cavernous and circular sinuses, their connection through the petrosals by means of which infection through the cavernous sinuses may travel to the general circulation by way of the jugular bulb.




1. Superior Ophthalmic Vein
2. Inferior Ophthalmic Vein
3. Cavernous Sinus
4. Superior Petrosal Sinus
5. Inferior Petrosal Sinus
6 and 7. Transverse Sinus
8. Circular Sinus

(From Grey's Anatomy, p. 621)
(From Grey's Anatomy, 18th Edition, p. 651)

## CONCLUSIONS

1. Cavernous sinus infection of nasal origin is a rare disease. It is fatal in 98% of the cases in which it is found, the only chance of cure being in early diagnosis with drainage. The transorbital route of Dr. Mosher is the most feasible. Early ligation of the internal jugular vein on the same side may arrest spread of the infection to the general circulation.
2. Surgery of minor infections about the face, particularly in the danger zones indicated, is bad practice unless frank pus is very evident; then the smallest incision possible for adequate drainage should be made.
3. In the management of the case reported, we regret that there was not an earlier diagnosis made, and that it was treated as a straight facial erysipelas for the first three days of observation. It is unfortunate that fundus. spinal fluid and complete blood examination were not made.

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# THE MORTALITY IN SOME OF THE COMMON SURGICAL CONDITIONS

BY A. MURAT WILLIS, M.D., F.A.C.S.*

IN a paper presented before the American College of Surgeons at the Philadelphia meeting in 1925, attention was called to the increasing deaths from a number of important surgical conditions. Last year, Dr. A. W. Marsh questioned the conclusions of this paper as regards the mortality rate from appendicitis, contending that the increase was only apparent and resulted from greater diagnostic skill on the part of the modern physician. He pointed out that in the city of Worcester, while there had been an increase in the number of deaths ascribed to appendicitis from 2 in 1890 up to 26 in 1924, simultaneously the deaths from "peritonitis" had fallen from 22 in 1890 to 12 in 1924. Taking the mortality rate per 100,000 from these two causes combined, he found that it was 28.5 in 1890 and only 20 in 1924. According to Dr. Marsh, the explanation is obvious; in the earlier days, the cause of many deaths was stated to be "peritonitis", whereas this was actually a secondary factor, the primary one consisting of a diseased appendix; with elevation in the standards of medical education and increasing interest in the accuracy of statistics, the primary cause became recognized in a greater and greater number of cases and, consequently, we see a rise in the number of reported cases of appendicitis and a coincident fall in those of peritonitis.

Further to support his contention, Dr. Marsh presents figures showing the percentage mortality of appendicitis as treated in "a group of New England Hospitals." These figures are somewhat confusing; in his first table dealing with them, he states that the mortality from "acute" (presumably appendicitis) fell from 0.06 per cent. in 1905 to 0.018 per cent. in 1920. In discussion of the figures, however, he says that they "include all the chronic cases" and a table is then given in which "we exclude the chronic cases." In this latter table, the mortality rate was 0.11 per cent. in 1905, falling to 0.035 per cent. in 1920.

So far as I am aware, these are the lowest figures heretofore reported and one can scarcely ever hope to better them. However, Dr. Marsh finds that in the Worcester City Hospital the "number of deaths occurring in acute appendicitis is 1%." One can only speculate as to the significance of this; is it 1% of admissions or 1% of the operative cases? Apparently, it refers to a limited number of cases, because we find that the "deaths in acute appendicitis with local abscess or local peritonitis" were 8%; and the deaths from "acute appendicitis with general peritonitis" were 30%. From this, it would seem the operators of the Worcester City Hospital are obtaining results comparable to those seen elsewhere in the country and falling far short of the scale of achievement manifested in the "dozen hospitals in four New England states."

There can be no question that greater accuracy in diagnosis plays a part in leading to the increased number of deaths ascribed to appendicitis; but how large a part? In a discussion of the rising death rate from appendicitis in a number of cities, Hoffman concludes that "improved diagnosis cannot possibly express the sum total of the increase." It was in 1918 that a determined attempt was made to ascertain the primary cause of death, and it is fair to assume that the results of this campaign had affected the physicians by 1920. Unfortunately, for the present purpose, the Bureau of Vital Statistics no longer takes cognizance of deaths from "peritonitis;" consequently, it is impossible to ascertain the relationship which exists in the registration area between appendicitis and peritonitis in recent years. As a matter of fact, Dr. Marsh's figures for Worcester, while supporting his argument when a comparison is made between 1890 and 1924, fail entirely to do so when reference is made to the figures for 1910 in comparison with those of 1924. In 1910, appendicitis was held responsible for a little over 64% of the deaths from this cause and peritonitis combined; 14 years later, appendicitis contributed about 68% of the combined mortality, indicating, therefore, that there had been scarcely any change in the statistical relationship of these two conditions between 1910 and 1924 as regards the City of Worcester. This is quite in harmony with the fact that there has been little increase in our knowledge regarding the pathology and symptomatology of appendicitis in the past ten years; certainly, few additions to our diagnostic methods as applied to this condition have been made since 1920. Therefore, any increase in the number of deaths per 100,000 population in the registration area since 1920 can scarcely be ascribed to greater care in securing reports or to increased diagnostic skill on the part of the physician. There are now available figures including 1925 for the registration area of the United States, and in table 1, are shown the deaths per 100,000 for the years 1920-25 inclusive.

It is obvious that there has been an almost uninterrupted upward trend in the mortality rate from appendicitis since 1920; estimating on the basis of a population of 110,000,000, our failure to maintain the rate existing in 1920 resulted,

*For record and address of author see "This Week's Issue," page 824.

in 1925, to the loss of over eighteen hundred lives.

Nor do the figures since 1920 for certain other important surgical conditions appear any more encouraging. In Table 2, the deaths from biliary calculi, disease of the thyroid, and ulcer of the stomach and duodenum are given.

TABLE 1

DEATHS FROM APPENDICITIS PER 100,000

| | |
|---|---|
| 1920 | 13.4 |
| 1921 | 14.4 |
| 1922 | 14.2 |
| 1923 | 14.8 |
| 1924 | 14.9 |
| 1925 | 15.1 |

TABLE 2

DEATHS FROM BILIARY CALCULI, THYROID, AND ULCER PER 100,000

| | *Condition* | | |
|---|---|---|---|
| Year | Bil. Calculi | Thyroid | Ulcer |
| 1920 | 3.6 | 0.8 | 3.6 |
| 1921 | 3.9 | 2.7 | 4.9 |
| 1922 | 3.9 | 2.8 | 5.1 |
| 1923 | 3.7 | 2.8 | 5.3 |
| 1924 | 4.0 | 3.3 | 5.6 |
| 1925 | 4.0 | 4.0 | 6.0 |

These are truly astounding figures. In 1920, the death rate from diseases of the thyroid was only 0.8 per hundred thousand; four years later, it had increased *over four hundred per cent.* Expressed in other words, had we maintained the rate of 1920 in 1925, approximately *three thousand lives would have been spared.* Although the percentage increase in the case of ulcer has not been so great as with thyroid disease, the total of deaths from our surgical progress lags only a little behind; "improved" therapy in 1924 has been accompanied by the loss of *over two thousand patients* more than would have succumbed had the 1920 rate been maintained.

Why are more people dying annually from appendicitis? Are causes at work which we can determine and eliminate? It has been suggested that there is an increasing number of cases of appendicitis; an increase so great as to cause a rise in the total number of deaths in spite of a decline in the percentage mortality. It is difficult to conceive of this being the case. As the result of a questionnaire sent to pratically every hospital in the state of Virginia, it was ascertained that approximately 5,000 cases of appendicitis were operated upon in these institutions during the year 1924, with a mortality of about 6%. If the population of Virginia is placed at two million, the same incidence of appendicitis in the total registration area, comprising about one hundred and ten millions would give a total number of cases of appendicitis of at least two hundred and fifty thousand annually.

In all likelihood, at least two appendices are removed during the course of abdominal operations undertaken for other purposes than are removed in operations solely for the purpose of appendectomy; consequently, we arrive at the astounding total of 750,000 appendices removed annually. If this reasoning is correct, it is obvious that we should be reducing the proportion of susceptible individuals; granting this fact, it can scarcely be that the rising death rate is due to a greater incidence of appendicitis.

The more thought devoted to the subject, the more convinced I am that preventable causes exist to explain this rising mortality rate. Again and again in the literature appear papers reporting the excellent results obtained by some particularly brilliant surgeon and creating the impression that by *his* technic and with *his* skill various operative precedures are robbed of all danger for the patient, who, submitting to the scalpel, is enabled to live happily forever afterward. In the discussion of Dr. Marsh's paper, there was evidenced a complete failure to grasp the significance of my earlier contentions; no one believes for a moment that the mortality rate for appendicitis in the hands of any individual operator is mounting from year to year; quite the contrary, and I am only too willing to agree with the gentleman from Burlington or elsewhere that *he* is losing fewer and fewer cases of appendicitis in proportion to the increase in his technical skill and, more especially, his surgical judgment. But it is just this attitude of complacency that exercises a pernicious influence on the younger men; as a result of their reading or the instruction they receive in medical school or hospital, they come to consider appendicitis a simple matter and the problem merely an *operative* one; and it is only after an experience gained at the cost of valuable lives that they learn it is far otherwise, because upon the surgeon's ability to judge properly the indications for immediate operation or delay may depend the outcome of the case.

The confusion that exists in the mind of the student or young operator is readily understood when one reads such statements as this: "When it comes to the later case, . . . . there seem to be two methods of handling it. One by immediate operation . . . .; the other, the conservative method. . . . . I have yet to learn that either one or the other has shown such preponderant superior success that it can convince everyone that it is the best." And on the same page: "It is in this class of cases which Ochsner describes as too late for the early operation and too early for the late operation where I think the judgment and experience of the surgeon counts for a good deal." Why should it count? If the author quoted believes that immediate

operation will give as good results in these late cases as will delay, the inexperienced man (and, alas, there are far too many), may adopt the rule of immediate operation in every case; and I need only refer to the figures of Gatch, following this procedure, as compared with those of Ochsner, employing the conservative method.

Two serious faults exist in our teaching regarding the treatment of appendicitis; in the first place, emphasis is laid on the simplicity of operation; in the second place, too often the problem is made to appear as merely an operative one.

The rising death rate from biliary calculi, thyroid disease and ulcer likewise may be attributed to over-enthusiasm on the part of surgeons. A tendency arises to regard every pathological condition as an indication for immediate surgical intervention; in some clinics, the most varied symptomatology is taken as indicative of disease of the gall-bladder; and the optimistic reports as to "cure" from surgical treatment in this and other pathological conditions leads less skilful surgeons to attempt duplication of these marvelous results. It is a matter of some significance that the death rate from ulcer has increased *pari passu* with increase in the tendency toward more and more radical procedures; first, the negation as to any value of medical treatment, with the advocacy of gastro-enterostomy; then discontent with this relatively conservative surgical method and the substitution by many of the much more radical gastrectomy. It is not that gastro-enterostomy or even gastrectomy carries an excessive mortality in properly selected cases and in the hands of skilled surgeons, but it is the example of these leaders and the influence of their written and spoken word that leads poorly fitted operators to attempt duplication of their feats.

With cholecystitis, emphasis has been placed recently on one fruitful cause for unfortunate results following operation; namely, the existence of cardiac involvement in the patient. Cholecystitis is prone to occur in just the type of patient in whom is encountered myocardial involvement; the middle-aged or elderly, obese individual, often with some focus of infection. Indeed, a symptomatology so closely resembling biliary colic may be encountered in some of these cardiac patients as to render correct diagnosis of the utmost difficulty; and unless the greatest caution is exercised, laparotomy may be performed because of epigastric pain, rigidity of the abdominal muscles, fever, and leucocytosis, only to disclose a normal gall-bladder and to be followed by a fatal outcome. It is not generally recognized by surgeons that anginal attacks may be accompanied by pain referred to the epigastrium and it has been my experience that some of these patients may show delayed filling of the gall-bladder in the absence of obvious disease of this organ.

## VINCENT'S INFECTION

### Report of an Apparent Outbreak at Smith College

BY KATHERINE PARDEE, M.D., FAITH FAIRFIELD GORDON, M.D., AND CATHRYN RILEY, M.D.*

DURING the twenty-three days of March preceding the 1927 spring vacation, we examined smears from the gums or throats of 462 of the Smith College students. Of these 139 were found to show numerous fusiform bacilli and spirilla. Mild but definite clinical involvement was manifest in 113 of these, while only two (one of these the first of the series), developed all the typical symptoms of Vincent's angina.

Our purpose in reporting these cases is not to offer any conclusions, but merely to analyze them and the various factors apparently involved. We do this because we found the published information on the subject of Vincent's infection often inconsistent and inconclusive. The general prevalence of the condition, the existence of carriers, the degree of contagion, and the influence of poor mouth hygiene and smoking are the particular factors on which it was thought further information would be desirable.

On February 25th, 1927, a student, H. N., developed a typical case of Vincent's angina, including a general involvement of the gums, a good deal of inflammation of both tonsils, and enlarged cervical glands. There was a slight rise in temperature and pulse associated with this, and the student felt sick. A smear from the throat confirmed the diagnosis.

On March 2d, her roommate, E. R., went to a local dentist because of mild gum symptoms. A smear at our office showed large numbers of fusiform bacilli and spirilla. Her symptoms were typical of the cases which followed. These consisted of slight redness and puffiness of the gums, usually about a few teeth only, frequently the outer aspects of the lower incisors. In a very few instances there were beginning ulcerations. During her roommate's absence at the infirmary E. R. roomed with a third girl, M. C. This girl came to the office for examination, but her smear was negative.

On March 3d, twenty girls came for observation. Smears from the gums were positive in five. M. C. was examined again and this time the organisms were found.

On March 4th, nineteen more students were seen for the first time. Of these three harbored

*For records and addresses of authors see "This Week's Issue," page 824.

the organisms. One student, seen the day before, now had a positive smear. One student definitely exposed to E. R. had fusiform bacilli but no spirilla.

All but one student seen on these three days ate in the same dormitory dining-room. We therefore supposed that we were dealing with a house infection. But beginning March 5th students came in from other dormitories and we found the condition widespread. The students from whom smears were taken were those who came voluntarily to the office for examination because they thought they had symptoms or believed themselves exposed.

Smears were taken from the mouth only, except in a few cases in which a throat smear seemed indicated. All smears were taken with an ordinary cotton stick applicator. This method was reasonably satisfactory, although a few cases called negative were found to be positive when a smear was obtained by dental technique. We used a carbol-fuchsin stain, considering positive only those smears showing both fusiform bacilli and spirilla.

Treatment was in the hands of the local dentists and consisted of daily applications of

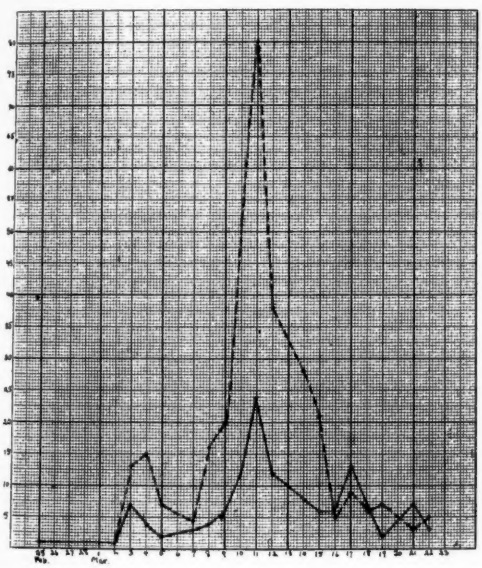

FIGURE A. Relationship between the number of negative and positive smears between Feb. 25 and March 23. Solid line, positive smears; broken line, negative smears.

chromic acid and a mouth wash. Our criterion for discharge was a negative smear on two successive days.

In the 139 cases with positive smears the clinical condition was noted as characteristic or suspicious in 91, or 65%. In only 10 of these did the throat alone show signs of infection. In 25 instances, or 18%, the gums were noted as normal. The remaining 22 were first examined by a local dentist, who reported them characteristic.

Figure A shows the number of students examined for the infection each day. The sudden and marked drop in the number examined after March 11th may be explained by the fact that we stopped taking smears from those who showed no clinical evidence of infection. By March 19th, students were beginning to leave for the spring vacation. Because of these factors we hesitate to interpret our curve as representing that of a true epidemic. However, the fact that only 4 or 5 students showed any symptoms during the spring term is suggestive.

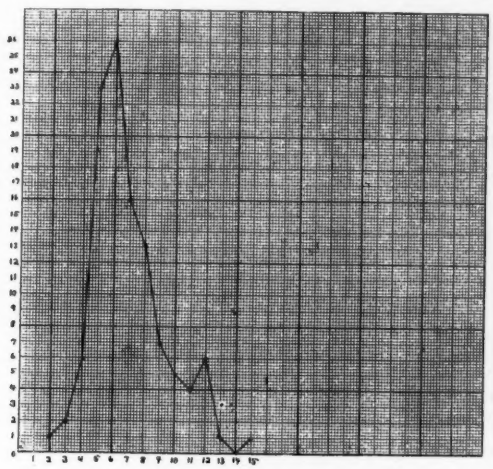

FIGURE B. Length of time required for treatment. Vertical line represents number of cases, horizontal line days. 61% or 87 cases were cleared by the 8th day.

The length of time required for treatment varied from two days to more than two weeks. However, as Figure B shows, 87 cases, or 61%, were cleared by the 8th day. In 24 cases, or 17%, more than 8 days were necessary, and 14 cases had not recovered by the spring vacation.

That our proportion of positives, even in a time of unusual prevalence, was below that reported by Campbell and Dyas[1] and Clewer[2] is probably ascribable to the fact that we were dealing with a group of girls in whom good oral hygiene was the universal rule. Our small proportion of carriers, only 18% having the organisms but no symptoms, may also be attributable to this circumstance.

The influence of smoking on the susceptibility to Vincent's infection was also considered. As an arbitrary division we classified as moderate smokers those students who smoked 6, 8, or more, cigarettes daily. Those who smoked less we considered occasional smokers. The data is shown in Figure C. Our information was inconclusive because we did not get the information from all the students. In our group of students moderate and occasional smoking had no apparent significance. However, the dentists noted that heavy smoking continued during the treatment delayed the cure.

## SUMMARY

1. In a group of 462 students, 139 were found to have Vincent's organisms in their mouths or throats.

2. Of these 82% showed mild redness and puffiness of their gums, or inflamed throats.

3. The majority of cases were cleared by the 8th day of treatment.

4. Moderate smoking apparently did not influence the incidence of the disease but possibly delayed cure.

5. Good oral hygiene seemed the most important factor in decreasing susceptibility.

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1 J. Am. Assn., 1927, 6:1596.
2 J. Roy. Army Med. Corps, London, 1923, XL, 285-290.

| | Smokers | | | | | | Non-smokers | |
|---|---|---|---|---|---|---|---|---|
| | Moderate | | Occasional | | Total | | | |
| | No. | % | No. | % | No. | % | No. | % |
| Neg. | 19 | 13.3 | 75 | 52.4 | 94 | 66 | 112 | 70 |
| Pos. | 10 | 7 | 39 | 27 | 49 | 34 | 49 | 30 |
| Total | 29 | 20.3 | 114 | 79.4 | 143 | 100 | 161 | 100 |

FIGURE C. Influence of smoking on Vincent's infection. The relative proportions of smokers and non-smokers were similar in the negative and positive groups.

# MEDICAL PROGRESS

## PROGRESS IN SYPHILIS, 1927

BY AUSTIN W. CHEEVER, M.D.*

THERE has been about the usual number of articles on syphilis during the past year but they show practically no advance from the therapeutic point of view since bismuth has been accepted and placed as to its value, as also tryparsamide and malarial therapy. There has been some experimental work along the lines of fever therapy using other means than malaria; while Hinton's glycerol-cholesterol precipitation test has been a distinct contribution to the field of serology; tissue-transfer as a criterion of cure, which has been recognized in experimental work for some time, is now advised in the human subject.

### ORIGIN OF SYPHILIS

Scholars have expended much learned labor in the endeavor to find descriptions of syphilis among ancient writings, but they have not found enough to be convincing. About 1500, however, there began to be many unquestionable references to the disease showing conclusively that it was at that time of very recent appearance in Europe. It has aroused interest outside the medical profession and John P. Rice, Professor of Romance Languages, University of Buffalo, has collaborated with Herbert U. Williams, M.D. and Joseph Renato Lacayo, M.D. (*Arch. Dermat. & Syph.* 16: 683, December, 1927) in collecting citations from numerous early Spanish writing, some of which had never before been translated into English, supporting the American origin of syphilis.

### RESEARCH

The first experimental study of the effect of elevation of body temperature on syphilis seems to have been made in 1919 by Weichbrodt and Jahnel (*Deutsche med. Wchnschr.* 45: 483, 1919) who exposed rabbits with scrotal chancres to an incubator temperature of 105.8 F. (41 C.) for thirty minutes twice daily for several consecutive days. The chancres gradually involuted to complete healing in from three to five weeks. In a previous communication Schamberg and Rule (*Arch. Dermat. & Syph.* 14: 243, September, 1926) showed that by hot baths rabbits could be prevented from developing the disease after experimental inoculation. In the present study the same authors (*J. A. M. A.* 88: 1217, April 16, 1927) applied baths subsequent to the development of chancres. In those rabbits which were thus treated the chancres disappeared as rapidly as occurs after the use of arsphenamine, whereas the untreated controls progressed in the usual manner. Tissue-transfer using popliteal and inguinal glands was negative in the animals which had been given the baths. Frazier (*Arch. Dermat. & Syph.* 16: 445, October, 1927) continued these investigations and found that rectal temperatures from 106.2 to 110.6 F. induced in rabbits by bathing in water at 113 F. for fifteen minutes at intervals of from twenty-four to forty-eight hours resulted in definite inhibition in the clinical progress of the disease in three animals inoculated with virulent syphilitic virus four days before the institution of the first of ten baths; and in the complete suppression of the infection in one of these animals. Three control animals identically inoculated but not bathed developed local syphilitic lesions within the usual period, and later two of them showed metastatic lesions of the uninoculated testis. It was found that raising the body temperature from 103.3 to 106.7 F. by bathing the rabbits in water at 107.6 F. for twenty minutes had no significant effect on the disease.

Schamberg and Tseng (*Am. J. Syph.* 11: 337, July, 1927) report their results of hot baths in human patients with syphilis, safely raising the body temperature in some cases as high as 106 F. There was a perceptible improvement in the cutaneous manifestations, sometimes to the point of disappearance, and there seemed, also, to be a slight improvement in the Wassermann reaction. After a series of very hot baths they found a transient leucocytosis followed by a brief reduction in the white cells, as well as a temporary slight rise in systolic blood pressure and frequently a great drop in the diastolic pressure, also temporary; a fall in the blood cholesterol averaging about 10 per cent.; the same percentage of rise in the blood sugar; while the urea nitrogen, blood uric acid, proteolytic and lipolytic enzymes were not influenced.

Wagner and Brienl (*Klin. Wchnschr.* 6: 805, April 23, 1927) used Rocky Mountain spotted fever in rabbits previously infected with syphilis. The fever caused a rise in temperature to from 40 to 41 C., lasting one week and exerted a curative influence on the syphilitic infection.

Accidental reinfection was at one time considered a satisfactory proof that the person developing the reinfection had been cured of his first attack; gradually the validity of this assumption has been questioned and Chesney, Halley, and Kemp (*J. Exper. Med.* 46: 223, Aug. 1, 1927) found that syphilitic rabbits, whether treated or untreated, after the ninetieth day of infection were more refractory to subsequent in-

*For record and address of author see "This Week's Issue," page 824.

oculation with the homologous strains of Spirocheta pallida than to inoculation with heterologous strains. The resistance which develops in rabbits during the course of a syphilitic infection appears, therefore, to be strain-specific rather than species-specific.

The application of the tissue-transfer method, familiar to those who follow experimental work, to the study of the problem of the curability of syphilis in the human being has been made by Chesney and Kemp (*J. A. M. A.* 88: 905, Mar. 19, 1927) who report on the results of intratesticular inoculation of rabbits with patients' lymph nodes removed before and after treatment. After their use of this test in three patients they do not maintain that negative lymph node transfers are proof of the cure of syphilis, but conclude that "this method offers a means of studying the curability of the disease, and that valuable information will be derived when a large experience with it has been gathered".

The value of sodium thiosulphate in relieving patients with heavy metal poisoning has been reported by many as giving brilliant results while some others find it of little value. Voegtlin and Dyer (*Pub. Health Rep.* 42: 1045, April 15, 1927) experimented with this drug to determine whether it might not be of value in preventing toxic manifestations following intensive treatment with arsphenamines. They found that large doses of sodium thiosulphate did not decrease the trypanocidal efficiency of arsphenamine, neoarsphenamine, or sulpharsphenamine, nor did they exert a deleterious effect on the spirocheticidal action of sulpharsphenamine. On the other hand Haag and Bond (*J. A. M. A.* 88: 1219, April 16, 1927), after experimental work on dogs, state that their findings convince them that sodium thiosulphate is absolutely valueless against poisoning produced by the oral administration of the solution of potassium arsenite.

In the past a few articles have appeared suggesting the use of actinotherapy, generally in the form of ultraviolet light, in syphilis, reasoning that since light therapy has been of such value in tuberculosis it should be in syphilis, also a chronic, generalized disease. Brown and Pearce (*J. Exper. Med.* 45: 497, 1927) carried out a series of experiments to determine the reaction of rabbits inoculated with syphilis to their light environment. The conditions compared were diffuse sunlight through ordinary window glass, constant and continuous exposure to artificial light with a wave length of from 3022 to 5790 Angström units, and complete exclusion of light. These tests showed that the efficiency of the reaction to infection increases with the amount of light received and with the constancy of exposure to it.

Rosen and Krasnow (*Arch. Dermat. & Syph.* 16: 16, July, 1927) studied the blood sugar content of 120 syphilitic patients, and found that 68 per cent. of these cases showed a sugar content within the range of from 70 to 100 mg. per hundred cubic centimeters of whole blood; 9 per cent., a value below 70 mg.; and 23 per cent., above 100 mg. per hundred cubic centimeters. Patients who showed a low or high blood sugar content when on an unrestricted diet did not always give a corresponding value when fasting.

At the 1926 meeting of the Italian Society of Dermatology and Syphilology in Rome, Rosellini, Lombardo, and Pasini (*Arch. Dermat. & Syph.* 15: 604, May, 1927) announced that their experimental attempts at inoculating llamas with syphilis were all negative. Thus they appear to have positively discredited the vague reports, which have never been substantiated, of experimental syphilis in the llama even in one case with the alleged production of some sort of immune bodies which could be used in human syphilis.

### SERODIAGNOSIS

A notable contribution to the field of serology has been made by Hinton who has given us a new precipitation test in his glycerol-cholesterol reaction. He reports (*B. M. S. J.* 196: 993, June 16, 1927) a new, simple, easily read, sensitive, serum test, apparently possessing greater clinical value and requiring less labor and materials than the Wassermann as shown by comparative study of 506 consecutive routine cases. The outstanding facts are: "First, of 138 cases of clinical syphilis the glycerol-cholesterol reaction was positive in 113 instances, whereas the Wassermann reaction was positive only in 61; secondly, that of 365 cases without clinical evidence of syphilis there was not a single positive glycerol-cholesterol reaction. This included 195 specimens from pregnant women. Furthermore, in the positive group there was one case of primary syphilis of nine days' duration and another of three weeks' duration; the Wassermann reaction was also positive in both of these cases. In three of the cases where the Wassermann reaction was negative in the blood and spinal fluid as well, the glycerol-cholesterol reaction was positive. An important point bearing on false positives by the Wassermann test is shown in the two cases where the Wassermann was positive and the glycerol-cholesterol reaction negative. In both these instances a very careful clinical examination failed to disclose any evidence of syphilis. Moreover, in those cases in which the Wassermann reaction was negative or doubtful and the glycerol-cholesterol reaction positive, the glycerol-cholesterol test showed itself to be a more delicate reaction and presumably a more reliable test than the Wassermann in giving indication of the inadequacy of treatment".

Kline and Young (*Am. J. Syph.* 11: 290, April, 1927) present a second communication (the first having appeared in the *J. A. M. A.* 86: 928, March 27, 1926) on their slide precipi-

tation test for syphilis, showing further simplifications and improvements. They feel that the test is as specific as the Kahn and Wassermann tests and has the advantage over these methods in that it is much simpler and requires much less apparatus and serum.

There has been a wealth of material written on serologic tests, both from the laboratory and the clinical points of view. The trend of the opinions expressed in this literature seems to be to replace the Wassermann test by precipitation tests, the best known of which is the Kahn, or in some cases to retain the two for the sake of comparison. Hopkins and Brunet (*J. A. M. A.* 88:311, Jan. 29, 1927) show that the later technic of the Kahn test is superior to the earlier and that its advantages lie in its simplicity of procedure (reducing labor and expense and eliminating possible sources of technical error), in rapidity of obtaining reports, in its usefulness with anticomplementary sera, and in its ability to reveal reactions in some cases in which the Wassermann is negative or doubtful. The authors decide that the Kahn is a little more sensitive than the Wassermann in primary syphilis and more persistently positive in many treated cases.

S. William Becker (*Am. J. Syph.* 11:131, January, 1927) does not find that the Kahn test replaces the Kolmer modification of the Wassermann. Both should be performed, he thinks, in order to obtain the utmost in serologic diagnosis. The Kahn gives more uniform results in repeated examinations and is more difficult to reverse from positive to negative by treatment, in his opinion.

In a comparative study of the Kahn and Wassermann tests in a little over 15,000 examinations, Berry, Ey, and DeLong (*J. A. M. A.* 88:1306, April 23, 1927) found complete agreement between the two methods in 89.13 per cent. of the cases; in 6.54 per cent. relative agreement, and in 4.32 per cent. disagreement. Their conclusion is that both tests give a high degree of specificity, and on the basis of their observations, it is planned to use both in a routine manner in the laboratories of the Ohio Department of Health.

### NEUROSYPHILIS

Kerlin (*Am. J. Syph.* 11:276, April, 1927) stresses what should, by now, be almost axiomatic, the need of routine spinal fluid examination in syphiiis.

Mills (*Brit. M. J.* 2:527, Sept. 24, 1927) also urges routine examination of cerebropsinal fluid because it is essential in the management of syphilis. He reports that pathologic spinal fluid was found in seven out of 147 patients with primary syphilis and negative Wassermann reaction; in 18 out of 136 primary cases with positive Wassermann reaction; in 178 out of 559 untreated secondary cases; in 69 out of 147 previously treated relapsing cases of a secondary nature. Of 330 tertiary cases exhibiting gummatous lesions 106 showed abnormal cerebrospinal fluid; of 133 patients with positive Wassermann reactions in whom no active gummatous processes could be discovered, 41 had pathologic spinal fluid. Of a total number of 87 congenitally syphilitic adults examined, 23 were found to have abnormal cerebrospinal fluid.

A case of tabes in a young woman who had normal reactions in the cerebrospinal fluid during the early secondary stage six years previous was reported by Banchieri (*Policlinico* 34:350, Mar. 7, 1927).

Becker (*Am. J. Syph.* 11:37, January, 1927) made a careful study of the sugar and chloride content of the cerebrospinal fluid in cases of neurosyphilis. He found the chloride content normal in his cases, but the sugar content too variable to be of definite aid in prognosis. Though his observations covered a year and a half, he decided that it would require study over a period of years to give data of value.

Bunker and Meyers (*J. Lab. & Clin. Med.* 12:415, 1927) report that the incidence of the traditional four isoagglutinin groups was found to be the same in a series of 91 patients with general paralysis as in the population at large. Since this is also true of syphilitics, general paralytics do not differ from syphilitics in this respect.

The malarial treatment of neurosyphilis is gradually finding its place as is also tryparsamide. O'Leary (*J. A. M. A.* 89:95, July 9, 1927) says that the treatment of neurosyphilis by malaria is of definite value, 49 per cent. of paretics remaining for a considerable time in remission. Some serologically negative cases of tabes with the lightning pains or gastric crises materially improved; some cases of optic atrophy were benefited. The mortality was about 5 per cent. The earlier the treatment was instituted, the better were the results. Goldsmith and Rockwood (*Am. J. Syph.* 11:165, April, 1927) report some interesting cases following the use of malaria in paresis. Their results are fully as encouraging as the usual reports and indicate at least favorable remissions in from 38 to 50 per cent. of cases. They conclude that this mode of treatment is a valuable adjunct in the care of neurosyphilis and they recommend it for adoption by hospitals and clinics dealing with such cases. Schamberg and Greenbaum (*Atlantic M. J.* 30:554, 1927) found the malarial treatment of syphilis of definite value in certain forms of neurosyphilis, particularly paresis. The results are best in early cases. Twenty-eight per cent. of their paretics became clinically normal by this method and those with sensory disturbances were distinctly improved. Optic neuritis, however, was not influenced.

Schwab and Cady (*Am. J. Syph.* 11:9, January, 1927) found 68 per cent. of their group of

paretic patients capable of being kept at, or restored to some economic standard of efficiency following the use of tryparsamide. In about 78 per cent. of patients the condition was arrested or improved clinically. The authors feel that results with tryparsamide are better than with malaria. Hadden and Wilson (*J. A. M. A.* 88:473, Feb. 12, 1927) offer definite evidence of great improvement in the physical state of patients in about 40 per cent. of cases treated with tryparsamide, and they consider the drug superior to any other used in the treatment of general paresis.

In order to avoid subjecting a patient to actual infection as occurs in the use of malaria, relapsing fever, sodoku, and the like, Sicard (*Paris Letter, J. A. M. A.* 89:1979, Dec. 31, 1927) has recently induced high temperatures in patients with general paralysis by intravenous injections of a culture of Ducrey's bacillus, which he calls "dmelcos" and which constitutes an effective vaccine in the treatment of simple or soft chancre. The injection is followed by a severe chill and then a rise in temperature to 39.5, 40, and 40.5 C. After a profuse sweat, the patient returns to a normal temperature. Experience has shown that this treatment repeated every two days until several dozen injections have been given, has never been followed by any untoward effect such as albuminuria or azotemia. Prof. Sicard and his associates, Haguenau and Wallich, have brought about ameliorations and long remissions in patients with general paralysis whom they have thus treated. Kunde, Hall, and Gerty (*J. A. M. A.* 89:1304, Oct. 15, 1927) in order to accomplish the same object used typhoid combined vaccine in courses of from eighteen to twenty-three injections, administered every second or third day, sufficient in quantity to produce a chill followed by fever of 103-104 F. rectally. The initial dose consisted of fifty million dead bacilli. After two months' interval a second course of treatments may be given, the initial dosage reduced to the original initial amount. In 49 unselected cases thus treated, 21 had good remissions and were restored to their former social conditions or occupations; of the eight who are dead, one died of pneumonia, one of suicide because of family difficulties, one of a complicating delirium tremens, one of cerebral symptoms, and the remaining four who were rapidly deteriorating before treatment was begun were not influenced by it. The authors do not advocate the use of this vaccine treatment in moribund patients.

### TREATMENT

Lipskeroff and Grebin (*Arch. Dermat. & Syph.* 16:442, October, 1927) studied a considerable number of different vehicles other than water in an attempt to reduce the reactions caused by neoarsphenamine; they found glucose the most promising. Gelatin, blood serum, and calcium chloride have some effect in some cases.

Ballenger and Elder (*Am. J. Syph.* 11:127, January, 1927) recommend the inhalation of perfume or smelling salts to prevent the unpleasant taste and odor of neoarsphenamine.

Stokes and Chambers (*J. A. M. A.* 89:1500, Oct. 29, 1927) report on a new bismuth synthetic. They feel that the effectiveness and availability of this new bismuth arsphenamine sulphonate in early syphilis should give it high value. The spirillicidal effect is slower than that of other arsphenamines and the healing effect is still slower, but the latter is no criterion of cure. The ultimate effect of this drug alone in early syphilis appears to be equal, if not superior, to that of modern intensive combined treatments with other drugs. As the toxicity of this bismuth synthetic is very low, reactions are comparatively benign and controllable. It is well borne in adult dosage by children over five years of age. In short, the authors feel that bismuth arsphenamine sulphonate gives promise of being valuable in the prevention of late syphilis by the simplification and increased effectiveness of the treatment of early syphilis.

Wright (*Am. J. M. Sc.* 173:232, February, 1927) tells of a method of using bismuth and neoarsphenamine which he considers highly satisfactory in early and latent cases of syphilis, while in secondary syphilis the lesions disappeared and the Wassermann reaction became negative in an average of six weeks, and remained so. Wright bases his report on 160 cases in which bismuth was used intramuscularly following courses of neoarsphenamine or in combination with neoarsphenamine, one injection of each drug every week.

Gruhzit, Tendick, and Sultzaberger (*Am. J. Syph.* 11:87, January, 1927) made estimates of the rates of absorption of three insoluble bismuth preparations: salicylate, potassium tartrate, and oleate. This was determined by giving injections to dogs and by making chemical analyses of muscles containing the injected material at autopsies performed at varying intervals. It was found that salicylate was most readily absorbed, potassium tartrate less, and oleate least of all. These conclusions should be compared with those formed from the roentgenologic studies of Cole, Farmer, and Miskdjian who found the bismuth potassium tartrate more readily absorbed than the salicylate.

Gruhzit and Sultzaberger (*Am. J. Syph.* 11:103, January, 1927) report studies in dogs, similar to the above, with the use of a soluble bismuth salt, sodium bismuth thioglycollate. They found absorption very rapid. The drug seemed to be deposited in higher concentration in bone, kidneys, and spleen than elsewhere, and appeared to be stored in bone. About 65 per cent. of the eliminated bismuth was found in the urine; about 35 per cent. in the feces, as compared with 80 and 20 per cent. respectively in the case of insoluble bismuth salicylate. The peak of elimination with a soluble salt was

reached in seventy-two hours but with the insoluble preparations at about the end of the first week.

Gregor and Gastineau (*Arch. Dermat. & Syph.* 15:43, January, 1927) found stovarsol useful in controlling clinical manifestations and serology of syphilis, though it has not been shown how permanent are the favorable results. They feel that its efficiency is comparable to that of neoarsphenamine, and systemic reactions are very slight as compared to those following intravenous treatment. It appears to be valuable in aborting syphilis and consequently should be of use for prophylactic purposes. However, further study must be made on experimental animals as to proper dosage and the effect on the tissues.

### CONGENITAL SYPHILIS

Bondurant (*Arch. Dermat. & Syph.* 15:695, June, 1927) reports two families with syphilis reaching, in his opinion, to the third generation. Considering the contradictory opinions of Fournier, who felt that transmission to the third generation occurs, and Hutchinson, who from a wide experience felt that it does not, and the paucity of literature on the subject, the author feels that theoretically syphilis may be passed on to the third and even fourth generation, though no case has been reported where it has been passed further than the third. Smith (*Arch. Dermat. & Syph.* 15:527, May, 1927) has given a very excellent survey of 1000 cases of congenital syphilis seen since 1914 at the Massachusetts General Hospital. McCord (*J. A. M. A.* 88:626, Feb. 26, 1927) studied 243 fetal autopsies, of which only 50 babies were born alive. Syphilis was determined as the cause of death in 57 per cent. of these cases. The bone lesion known as Wegner's disease appears pathognomonic; lungs, kidneys, and liver seem to be the tissues most frequently involved.

### ULCUS VULVAE ACUTUM

While not specific, this condition should be called to general attention as it may arise as a differential diagnostic problem. Stryker (*Arch. Dermat. & Syph.* 15:54, January, 1927) reports a case from St. Louis which is probably the second to be reported in American literature though not unusual in Europe. There suddenly appeared on the labia and surrounding skin ulcers from 3 to 7 mm. in diameter, irregularly shaped with an inflamed areola about which the sides were sloping and the edges undermined. The bases were depressed and covered by a white necrotic membrane. They were tender to touch and pressure, otherwise not uncomfortable. Bacilli resembling Bacillus carssus were found in large numbers but were not cultured as the lesions healed before media could be obtained.

# THE MASSACHUSETTS TUBERCULOSIS LEAGUE

ONE hundred and fifty members and friends of the Massachusetts Tuberculosis League were present at the Annual Meeting held at Hotel Kimball, Springfield, on April 30th. From the twenty-eight Affiliated Organizations of the League, officers, members, and workers participated in the sessions which were held in the morning and at luncheon at the Hotel and a visit to Westfield State Sanatorium in the afternoon. Dr. Kendall Emerson, President of the League, presided at the sessions.

Dr. William Charles White of the United States Public Health Service was the speaker at the morning session, his topic being "The Responsibility and Future of Tuberculosis Research in the United States".

Mr. George J. Nelbach, Executive Secretary of the New York State Tuberculosis and Public Health Committee of the State Charities Aid Association, was the speaker at the luncheon meeting, his topic being "Fundamentals and Other Things in the Tuberculosis Association's Program".

Dr. John M. Birnie, President of the Massachusetts Medical Society, brought the greeting of the State Society to the Annual Meeting. Dr. Birnie spoke on the importance of close coördination of effort on the part of the public health authorities, the medical profession, and the volunteer agencies.

Dr. George H. Bigelow, State Commissioner of Public Health, brought the greetings of the State authorities.

Dr. S. L. Skvirsky, on behalf of the Nominating Committee, presented the names of the nominations for election of Directors, Officers, and members of the Executive Committee.

*For Honorary President:* Edward O. Otis, M.D.

*For President:* Kendall Emerson, M.D.

*For Honorary Vice-Presidents:* George H. Bigelow, M.D., Vincent Y. Bowditch, M.D., Rt. Rev. William T. Lawrence, D.D., Rabbi Harry Levi, William Cardinal O'Connell.

*For Vice-President:* Frederick T. Lord, M.D.

*For Treasurer:* Mr. Arthur Drinkwater.

*For Assistant Treasurer:* Mr. Romney Spring.

*Clerk of the Corporation:* Mr. Frank Kiernan.

*Executive Committee:*

Dr. Roger I. Lee (to succeed himself) to serve for three years.

Dr. Walter P. Bowers (to succeed himself) to serve for three years.

Dr. Nahum R. Pillsbury to succeed Dr. Adam S. MacKnight, deceased. Term to expire April, 1929.

*Directors:*

Mr. Sydney Ashe
Mr. Walter S. Barr
George H. Bigelow, M.D.
Vincent Y. Bowditch, M.D.
Walter P. Bowers, M.D.
Mrs. B. Milo Burke
Robert Carpenter, M.D.
Henry D. Chadwick, M.D.
I. J. Clarke, M.D.
Gardner N. Cobb, M.D.
Miss Josephine B. Colt
Francis G. Curtis, M.D.
Hilbert F. Day, M.D.
Francis P. Denny, M.D.
J. Frank Donaldson, M.D.
Mr. Arthur Drinkwater
Edward H. Ellis, M.D.
Mrs. Bessie Ellison
Kendall Emerson, M.D.
Mrs. Carolyn M. Engler
Cleaveland Floyd, M.D.
Harold A. Gale, M.D.
Mr. William B. Geoghegan
Mr. George H. Gilbert
Mr. William N. Goodell
Mrs. E. Frank Guild
John B. Hawes, 2nd, M.D.
Mrs. John D. Henry
William O. Hewitt, M.D.
George S. Hill, M.D.
Samuel Hoberman, M.D.
Mr. Charles H. Hobson
Mr. Clifton H. Hobson
Mr. C. E. Hodgkins
Prof. Murray P. Horwood
George P. Hunt, M.D.
Mr. Arthur Kendrick
Roger I. Lee, M.D.
John H. Lindsey, M.D.
Frederick T. Lord, M.D.
Carl C. MacCorison, M.D.
Richard P. MacKnight, M.D.
Mrs. T. Joseph McAuliffe
Rev. J. F. McGillicuddy
Mrs. Frances B. Mowry
Edward O. Otis, M.D.
Olin S. Pettingill, M.D.
Nahum R. Pillsbury, M.D.
Miss Clementine Platt, R.N.
Sumner H. Remick, M.D.
Mr. John Ritchie
J. Holbrook Shaw, M.D.
Mrs. Allan R. Shepard
Solomon Skvirsky, M.D.
Mrs. Mabel Greeley Smith
Mr. Edmund H. Talbot
Harry S. Wagner, M.D.
Roy J. Ward, M.D.
Miss Margaret Weir

Rev. Charles P. Wellman
Mrs. Josephine White
Mrs. Reginald Heber White
Mr. Raymond S. Wilkins
John M. Wise, M.D.
Mr. Arthur V. Woodworth

These were elected unanimously.

The report of the Treasurer, Arthur Drinkwater, Esq., for the last fiscal year, as audited by Certified Public Accountants, was read and received.

Following this meeting a visit was made to the State Sanatorium for Children at Westfield. Dr. Henry D. Chadwick, Superintendent, spoke on the importance of examination of contacts in families where someone has had tuberculosis. He presented a number of children who are patients at the Sanatorium and showed X-ray films of the improvement of their conditions from the time of admission to the present.

A vote of thanks by the League was extended to the Hampden County Tuberculosis and Public Health Association and the Springfield Chamber of Commerce for their coöperation in making the meeting a success.

## PRESIDENT'S REPORT—1927-1928

KENDALL EMERSON, M.D., F.A.C.S.*

HAPPY that nation whose annals are brief! It is "wars and rumors of war" which make up the bulk of history. During the past twelvemonth the Massachusetts Tuberculosis League has been peculiarly free from strife. Offensive or defensive warfare, both have been at low ebb, and internecine hostilities have been confined to the merest skirmishes.

We are concluding the fourteenth year of our work as a State League. The present active association is the fruit of all these years; its prosperity has not been bought without paying the price of development; we are not unacquainted with growing pains, some of them severe. But from the hard lessons of experience we have learned much as to method of operation, economy and efficiency, and it is not without justifiable hope that we look forward to a long season of continued service to the community which has given us its generous support.

Physically the League Headquarters is still housed in the crowded but comfortable offices in the Little Building where we welcome frequent visits from the local Secretaries throughout the State and where we would fain see other friends of the organization oftener and in larger numbers. Our Executive Secretary still reigns there with his accustomed vigor and tact and the smooth running of the machinery of the State work is largely due to his exceptional lubricating power. That sly thief, Matrimony, has stepped in to rob the office of our much beloved Educational Secretary. She has fought faithfully the hard fight to instill health education into an apathetic public and she has won consistent victories. The League bids her Godspeed and hopes for her victories no less conspicuous on her future battleground. We have been most fortunate in securing as her successor Miss Jean V. Latimer, who is admirably equipped to carry on this vital part of our work. In the opinion of your President the office is too meagerly staffed. The really enormous volume of work accomplished by devotion to duty on the part of these faithful people is a source of constant amazement to me and it is quite to the point that I call your attention to the unusual fidelity of the service they are rendering the League.

The Executive Committee has held its regular bi-monthly meetings throughout the year. Several changes have taken place in its personnel. In the death of Dr. Adam S. MacKnight the League has lost a friend of very long standing and one whose counsels will be grievously missed. His was a life long service in the anti-tuberculosis cause and he has left a gap in the ranks not easy to fill. Mr. Sydney Ashe of Pittsfield resigned from the Committee because of press of work in connection with his exacting business. His interest remains strong and the League can always count on him for special service in the western part of the State. Rev. Charles P. Wellman, President of the Franklin County Public Health Association, has been chosen to succeed Mr. Ashe and has already served at several of our meetings.

It is not my duty to lay before you in detail the work of the League during the past year. That you will hear in later reports. Suffice it to say that we have prospered reasonably. The Seal Sale went over the top and we can show an increase of $17,000.00 above that of last year, not a startling gain but considering the business situation throughout the State, entirely creditable. A slight growth of income has enabled us to complete a $10,000.00 revolving fund to care for emergency situations which may arise from time to time. We have fulfilled our obligations to the National Tuberculosis Association and have rendered the required statements of our annual program and work accomplished, as well as furnishing them with our budget and financial statement, and in return we have again been designated as the representative of the National Association in the State of Massachusetts. During last fall the National Association sent us Mr. David Moxon, one of its Junior Staff members, for a period of practical training in field work. This is in accord with the Association's policy and method of developing experienced personnel and I suppose we may feel complimented at their selection of Massachusetts as a desirable training school.

*For record and address of author see "This Week's Issue," page 824.

To your President not the least achievement of our society is its close coöperation with the other health organizations in the State. Particularly intimate and gratifying has been our relation with the State Health Department. This relationship applies also to the locals in their contacts with the District Health Commissioners of the State Department and with their civic Health Departments. I must pause an instant to stress the importance of this close friendship not only with the public health service but with all private societies for the advancement of health. A united front produces the best results and we should always be first to identify ourselves with the health program of our respective communities so far as they represent approved and legitimate enterprises and so far as it involves no loss to our own immediate commitments. During the past year the League was able to render direct service to the Ten Year Program of the State Health Department by supplying as special nurse Miss Ethel L. Dill, R.N., whose service to the Department was most valuable and was duly acknowledged by it. In keeping with our policy of close contact with the Health Department a special committee was appointed at our annual meeting last year, consisting of Dr. Harold A. Gale, Chairman, Dr. Nahum R. Pillsbury and Mr. William N. Goodell, this committee to confer with the Department on matters controversial or otherwise which might arise affecting the two organizations. A number of meetings have been held and as one result there has been issued a joint pamphlet on "Home Treatment for Tuberculosis", copies of which have been distributed at this meeting.

We have been approached by the New England Heart Association with the suggestion that, our interests and activities being closely allied, a definite consolidation of the two organizations might prove of benefit to both and to the community at large. There are some difficulties in the way but the idea is in keeping with the general trend of health work, all branches of which it is well recognized are being strengthened by coöperative action, thus avoiding overlapping and increasing economy of operation. Any arrangement which the Executive Committee may find feasible will be referred to the Board of Directors for action at some future date.

Fnally, a word of reference should be made to the Early Diagnosis Campaign. At a meeting of the Executive Committee of the National Association last week in New York it was reported that the Campaign throughout the country had gone with unprecedented success. The State Associations have taken hold of the enterprise with most creditable vigor and far more literature has been demanded than was anticipated. The early diagnosis films have been in constant use and their educational message has reached scores of thousands. Your President was in Los Angeles a fortnight ago and there saw the bill boards of the city richly placarded with the poster, "Let Your Doctor Decide". In view of this general energetic prosecution of the campaign the country over it is gratifying to hear from the National Association that the work done in Massachusetts in connection with this campaign compares favorably with that done by any State in the Union. Of course, such educational propaganda is not for this year alone. It is a principle well recognized in tuberculosis work and early diagnosis should figure with especial prominence in all our future programs.

And now one glance into the future. The days of gross organization are over. There are still some loose ends to be gathered up in this field. But the present is a time to take up the refinements of our work. A careful survey should be made by each affiliated organization of its program for the future. Established lines of effort should be strengthened rather than new ones sought. The community support of our projects must be more fully secured. To do this more of the representative citizens of each district should be gathered into the fold. This is not easy for such people are already overoccupied in good deeds. Recruits should be looked for among the younger generations. Local clubs should have their interest in the health program permanently enlisted. Frequently the summer camp has proved a ready means to this end. Greatest stress should always be laid, however, on the educational work. Here the schools offer our most direct mode of approach but the work is sadly needed in the industrial field and extension especially along this line is earnestly to be hoped for in the year that is before us.

In bidding the Massachusetts Tuberculosis League Godspeed for another year your President greets you with a heart full of gratitude for the splendid work accomplished by each and and every one of you and with the hope that more power may be given to your sturdy spirits for the sometimes tedious, but always satisfying labors which loom along the pathways of the future.

## ANNUAL REPORT OF EXECUTIVE SECRETARY

FRANK KIERNAN, A.B.*

Your Executive Secretary has completed his second full year in the service of the League and takes pleasure in giving a record of the work done in that period. This report will cover six general divisions, to wit: Finances, Administration, Field Work, Legislation, Health Education and Allied Activities.

### FINANCES

The report of the Treasurer for the year 1927, verified by a Certified Public Accountant, is the

*For record and address of author see "This Week's Issue," page 824.

official record of our financial operations for the year.

The Executive Committee of the League, continuing the policy approved by the Board of Directors, adopted a budget well within the anticipated revenue for the year and by carefully watching our expenditures we were able in all departments to live within the limitations of the budget and come out at the end of the year with about $1,000 to spare.

The President has referred to the fact that the policy of adding funds each year to our emergency savings has been continued and we have attained the objective set by the Executive Committee in 1924. It will be the recommendation of your Secretary to the Executive Committee, to continue the policy of adding $1,000 annually to our sinking fund on the general principle of thrift against the possibility of emergency situations or lean years that may come. The disasters in the South and other parts of the United States have demonstrated the wisdom of having such an emergency fund. The Budget Committee in February, 1928, submitted to the Board of Directors a budget for this year predicated upon a Seal Sale of $250,000 in the Commonwealth. Latest returns indicate that the gross Seal Sale will reach $255,000 which will give the League a small margin for undertaking activities, the need for which may develop during the year. That we were able to attain the highest Seal Sale ever reached in Massachusetts in 1927 is an accomplishment of unusual magnitude. As I journeyed over the State in the Summer and the early Fall in preparation for the 1927 Seal Sale, I heard in most places, not from the local secretaries but from local volunteer workers, business men, physicians, teachers, and others, a warning that because of industrial conditions it was not anticipated that the Seal Sale would reach that of previous years. I do not think any other conclusion can be drawn for the fact that the Seal Sale exceeded that of previous years than that our local Seal Sale chairmen, under the leadership of our local Executive Secretaries, planned a better campaign, introduced the features recommended by the National Association's representatives, and carried the Campaign through with fidelity and attention to detail that made the results, even in the fact of extraordinary adverse circumstances, so gratifying.

It also should be observed that the tuberculosis movement apparently has so deep a grip on the hearts of the people generally that they are willing to make quite extraordinary sacrifices to keep the work going each year on an expanding basis.

I should not leave the subject of the Seal Sale without publicly expressing the gratitude of the League and the Affiliated Organizations to the National Tuberculosis Association in general, and to Mr. Frederick D. Hopkins, Dr. Philip P. Jacobs, Mr. Basil G. Eaves and Mrs. May F. Sinks in particular, for their continued helpfulness in improving our Seal Sale methods.

### ADMINISTRATION

The offices of the League have been continued in their location of the past five years in the Little Building with an increasing number of visitors both from our own State, the other New England States, other parts of the Country, and from foreign countries. Recently visitors to our office included a missionary and his wife home for a visit from Japan who are starting back and who wanted to take with them health education material, including the special material on early diagnosis. We were able to supply them with a varied collection of free material and arranged from them to see the motion picture film "The Doctor Decides" which, I believe, they have taken back with them for use in their labors with their Japanese people. Such a story could be duplicated many times concerning visitors from far countries who come to us in a variety of ways for advice and assistance in their labors in their own countries.

The President of the League at our Semi-Annual Meeting touchingly referred to the possibility of the coming of international peace not through the conversations of diplomats or the intricacies of treaties so much as through the efficacious communal efforts along public health lines. We in the League are able to participate in a small degree in furthering this development through our contacts with visitors from other lands.

The League Staff has continued without enlargement during the year. In my report last year I indicated that it might be necessary to enlarge the personnel because of increasing demands made upon us. This has not been necessary not because the demands have not increased but because we have better systematized the work of the office and apparently everyone has been willing to take on more work.

*The Massachusetts Health Journal* has been continued with a circulation of 4,000 principally in the Commonwealth but partly also in the other States of the Union. We have received from many sources complimentary comments on the character of the *Health Journal* and these inspire us to improve it with each issue.

The Department of Public Health advised us that it would not need the services again this year of a Field Nurse so the work of Miss Dill was concluded in December. So far as we know there will be no field nursing service given this year. When the time is right and the Affiliated Organizations indicate their desire to have it, we shall recommend the appointment of a Field Nurse on the Staff of the League to assist the local secretaries in their problems of nursing work, administration, and collateral activities.

### FIELD WORK

Your Executive Secretary in the course of the

year visited at least once and in some instances many times the Affiliated Organizations.

In the summer of 1927 through a grant of the National Tuberculosis Association, supplemented by funds from the League treasury, a visitation was made of most of the summer health camps in company with a photographer who took pictures of the summer health camp activities. The League is in possession of an attractive and useful book of photographs of the summer health camp work of the Affiliated Organizations. This book has been used by a number of the Associations in connection with their meetings and campaigns and has been well worth the cost of producing it.

In the last analysis, the progress of the League is really the progress of its Affiliated Organizations and here should be recorded the salient advances made in the past year by many of our local associations.

The Boston Tuberculosis Association has continued its important coöperation with municipal tuberculosis authorities in the City of Boston and there has been created a Division of Tuberculosis in the Health Department with a full time and competent worker, with the establishment of clinics in the various health units of the City, with an enlargement of diagnostic and nursing service, and plans developed for a substantial enlargement of the Municipal Sanatorium at Mattapan. A notable contribution of the Boston Association in the year has been the furnishing of the services of a teaching nurse to the Boston Health Department for a period of six months for the purpose of training the nursing personnel in the most modern technique of tuberculosis work. The Boston Association pays the salary of this instructor and her activities are carried on under the direction of the Health Department.

In Berkshire County, the Presidency of the County Association has been assumed by Dr. George P. Hunt of Pittsfield, long active in tuberculosis work, who has given to the County Association a new impetus with a larger Seal Sale and expanded program of work. The Executive Secretary of the Berkshire Association has been invited to take charge of the Summer Health Camp of the Kiwanis Club of Pittsfield which means that the Camp will be conducted henceforth along the most successful lines.

The Cambridge Anti-Tuberculosis Association during the year conducted a tuberculosis survey of the City through Dr. Murray P. Horwood of Massachusetts Institute of Technology which will doubtless give a basis for an enlarged program of activities in that City. The Cambridge Association also did a notable thing in bringing to its Board Meeting, on an occasion specially arranged for the purpose, the Director of the Division of Tuberculosis of the State Department of Health, Dr. Sumner H. Remick, the Superintendent of Westfield State Sanatorium, Dr. Henry D. Chadwick, and the Executive Secretary of the League, at which all the activities of the Association, so far as they pertained to children, were reviewed, evaluated, and a revised program agreed upon in the light of the facts as developed and recommendations made by the visiting physicians.

In Essex County the Seal Sale was substantially increased through the adoption of new methods in a number of the larger communities. This enables the Essex County Health Association to carry on an expanding program in its territory.

In Franklin County, Rev. C. P. Wellman of Deerfield was elected President of the Franklin County Public Health Association. Meetings of the County Executive Board have been held in various parts of the County, the program has been expanded, and the Seal Sale substantially increased. It has been the privilege of the Educational Secretary and the Executive Secretary to be called upon to speak in various parts of Franklin County and to meet with local groups in large and small places to discuss their local problems.

In Hampden County, Dr. Parker M. Cort, who on account of change of his business did not choose to be re-elected in 1927, was succeeded by Dr. Henry D. Chadwick as President of the County Association—a most happy choice. Dr. Chadwick is also a member of the Executive Committee of the State League and a member of Committees of the National Tuberculosis Association. During the year the well-established program of the County Association has been continued and the Executive Secretary has acted as Chairman of the Publicity Committee of the Cancer Campaign in Western Massachusetts. Through the initiative of the Secretary of Hampden County, also, legislation is now pending before the General Court which, if enacted, will enable the preventoria in Counties where there are not County Hospitals to secure funds annually for the care of children in the summer preventoria. The Counties which have Hospitals and also preventoria connected with them, during the past two years, have been enabled, through legislation secured by Norfolk County, to secure $3,000 annually in connection with the summer health camps.

In Hampshire County, Miss Dorothea Stewart, R.N., one of the many people in our work to have fallen victims to Cupid's arrow, resigned in the Fall of 1927 and was succeeded by Mrs. Geneva F. Rockford, R.N., who has taken hold of the program energetically and has continued the work along the lines so successfully developed by her predecessor.

In the City of Holyoke, there has been a change of Presidents, Mr. Richard Towne succeeding Dr. George D. Henderson who gave many years of useful service to the Holyoke Society for the Prevention of Tuberculosis. The Holyoke Society proposes to abandon its Day Camp, conducted for a number of years, and construct a building on the grounds of the

Hampden County Association at Provin Mountain for the care of Holyoke children during the eight weeks of the preventorium season.

The Lowell Tuberculosis Council, during the year, expanded its membership so as to bring in to its activities representatives of the various sectarian groups in the City. This plan has worked with great success and more coöperation has been had not only with these groups but with the Health department and the School Department so that the Lowell program of work is now as constructive and comprehensive a program as is being carried on in any part of the Commonwealth.

In Malden Representative George L. Richards, for many years President of the Anti-Tuberculosis Society, has been succeeded by Mr. John Ritchie, long a Director of the League, formerly a Health Commissioner of the City of Boston, and a man of varied activities in the public health field during the past twenty years. Mr. Ritchie signalized his accession to office by organizing a mass meeting which was held in the Malden High School in connection with the Early Diagnosis Campaign and in which leading physicians and health workers of the City participated. Contrary to all the canons of holding health meetings, the large auditorium was packed with adults and older children to listen to a varied program on the subject of health over a period of two hours. This doubtless is the beginning of a year of enlarged usefulness of this Society, of which Mrs. F. Anna Green is the Secretary.

Southern Worcester County Health Association during the past year has extended its service, especially its health education service, to practically all the towns of its large territory. The new full-time Executive Secretary, Miss Christine B. Higgins, has with great energy expanded the program of health education for school children and adults so that every part of the territory is feeling the influence of the County Association.

The Southern Middlesex Health Association has expanded its program of health education, industrial health work, and summer health camp work, engaging the full time service of its Executive Secretary and an additional nurse who are doing an outstanding piece of follow-up work and preparatory work in connection with their exceedingly fine summer health camp. This Association has also inaugurated a Placement Service for arrested tuberculosis patients, upon which great demands have been made during the year to secure employment for persons who have returned from sanatoria.

In Plymouth County and in Norfolk County substantial increases have been made in the work of the summer health camps through funds secured from the County Commissioners. In Norfolk County twenty additional children were retained at the summer health camp for an additional period of six weeks enabling these children after intensive treatment for fourteen weeks to return to their school work restored to normal physical condition.

Southwestern Middlesex County during the year purchased a site for a summer health camp on which it is now establishing a camp to be opened this summer for the underpar children of its territory.

Limitation of time forbids detailed enumeration of the progress of other Affiliated Organizations. It still remains true, however, as stated last year, that as your Secretary journeys over the State making contact with all sorts and conditions of people he hears everywhere that the Affiliated Organizations of the League are recognized to be the foremost volunteer health agencies at work in our Commonwealth.

### LEGISLATION

We have been called upon less this year than in previous years to support meritorious health legislation and to fight undesirable proposals. The same arrangement which we have operated under in previous years has been continued. This arrangement is that we coöperate with the State and local health departments in supporting Bills which they favor and fighting legislation which seems undesirable.

It has been mentioned above that a Bill was introduced to enable certain counties to secure funds from the County Commissioners in support of the summer health camps. Your Secretary was petitioner and in coöperation with the Secretary of the Hampden County Association, fostered the progress of the Bill in the Legislature revising it and lobbying it along so that we have every reason to think it will be enacted into law.

We assisted in defeating a Bill which threatened the standards of eligibility for securing licenses in the Commonwealth as registered nurses.

### HEALTH EDUCATION

You have heard from our Educational Secretary the story of her work during the past year. The health education work of the League, in which somewhat over one-third of our revenue is put, has, under the leadership of Miss Johnson, continued to enjoy a healthy and substantial growth.

Health education will suffer a severe loss when Miss Johnson leaves us in the Fall. She has built up a good will among educators, nurses, and school authorities generally that is a substantial asset to the League and its Affiliated Organizations. Although she contemplates moving to another of our New England States we hope that her interest in our work will continue and that as she occasionally comes back to Massachusetts we will have the privilege of contact with her so that we may have the advantage of her check on the progress of our activities in this field.

As the President has stated we have been fortunate enough to secure a successor to Miss Johnson whose training and experience and personality are such that we have every reason to believe the health education program in Massachusetts will continue with unabated expansion.

Under the head of health education should come the important subject of the Early Diagnosis Campaign which was originated by the National Tuberculosis Association and carried on a nation-wide basis during the month of March. The Campaign was extended in the Commonwealth so that it ran through the months of March and April.

Practically all the Affiliated Organizations of the League carried on an intensive Campaign utilizing standard and some new methods of impressing the people with the importance of early diagnosis. It was a Campaign in health education that was exceedingly worthwhile.

Coming as it did, however, right on the heels of the Seal Sale it has seemed to me that it placed upon all of us a strain which, after the intensive period of the Seal Sale, we were not quite prepared to assume. I have made strong recommendation to the National Tuberculosis Association that the Campaign projected for 1928 be held later in the year to enable us to have a period of readjustment after the Seal Sale before undertaking another intensive piece of work, extending over a period of one or two months, in addition to our regular work.

### ALLIED EFFORTS

Your Secretary has been honored with an invitation to present a paper at the National Tuberculosis Association Annual Meeting to be held in Portland, Oregon, in June. I am at work now on this paper having secured help from the National Office, from the Secretary of New York State Tuberculosis Association and Pennsylvania Association, from the President of the National Conference of Tuberculosis Secretaries, and from some of the Secretaries of our Affiliated Organizations. As I make the trip across the country it is my purpose to visit the outstanding tuberculosis associations in several of the States to learn at first hand some of the successful methods that have been employed to the end that they may be as far as possible put into action in our own Commonwealth.

Your Secretary was again called to serve as President of the New England Conference of Tuberculosis Secretaries which has again been invited to arrange the program of the Tuberculosis Section of the New England Health Institute which is to be held in Burlington in September of this year.

In various parts of the Commonwealth your Secretary has been invited to speak to Rotarians, Kiwanians, Lions, Parent-Teacher Organizations, student bodies of schools, and at the annual meeting of a number of the Affiliated Organizations of the League.

During the year it has been my rare privilege to be associated with the State Commissioner of Public Health, with the Deputy Commissioner, and with the Director of the Division of Tuberculosis.

The Health Commissioner of the City of Boston, the Deputy Health Commissioner, and the Director of the Division of Tuberculosis have been consulted with from time to time in connection with our State and local programs.

I have been a regular attendant of the meetings of the Massachusetts Associations of Boards of Health and the meetings of the Massachusetts Central Health Council.

As a member of the American Public Health Association, I have been invited to participate in the conference to plan public health programs for Chautauqua circuits in the Northeastern section of the country.

Conferences for the local secretaries who conduct summer health camps, conferences for the special purpose of preparing for the Christmas Seal Sale have been held.

In the Fall of 1927, as President of the New England Conference of Secretaries, I arranged a series of meetings which began in Providence and which were conducted also in Springfield, Boston, Greenfield, Manchester, New Hampshire, and Portland, Maine.

### FINALLY

This is the story of the past year. We do not contemplate any substantial change in the year we are beginning and with the high quality of work that is being done by most of our Affiliated Organizations no material change is recommended. However, there is one particular in which I think it would be profitable for all of us to engage. This is to follow the example of the Cambridge Association, which has undertaken to search its own program, first, by having a scientific determination of the facts in the City of Cambridge by a competent health surveyor; secondly, by bringing into conference two of the outstanding men in the Commonwealth to analyze with its Board its program of activities for children.

What more useful thing could we all do in 1928 and 1929 than undertake self-examination with the assistance of outside persons competent to help us arrive at a fair valuation of the things we are doing and recommend changes, substitutions, or enlargements of our programs of work where such changes or enlargements seem to be the part of wisdom? In bringing my report to a close, I leave this thought with you for careful consideration.

The final word I have to say is one of gratitude to the President of this League, to the Officers and Secretaries of the Affiliated Organizations for their continued helpfulness throughout the year. It is not only a privilege and a pleasure to work with you in Massachusetts but there is the additional gratifying situation that

nowhere is there standing still but everywhere the zeal to do a better job year by year.

## EDUCATIONAL REPORT

MISS ANNA W. JOHNSON*

THE scene is a clinic; a child stands before the doctor on trial for her life; the verdict is "lack of fundamentals of healthy living"; the sentence is—death—and the curtain falls on a tragedy which even today is still written in the records of our school children.

The scene changes, and, in an ever-growing number of classrooms, steadily, surely these fundamentals of healthy living are being planted deep in the child's being by methods which follow modern educational principles, and which can and do succeed in building greater vigor and strength.

The scene is one of our town high schools; a boy a Junior, treasurer of his class, member of the basketball team, is reported ill with rheumatism. Lack of improvement calls for a specialist; a diagnosis of bone and pulmonary tuberculosis is the result, but a result which spells death for this boy in a period of a brief two months. And how shall the scene be changed here? Each step of growth is in response to a challenge and in this high school field today lies one of the greatest challenges for the tuberculosis organizations. We rejoice in the amazing growth and development of the health education program in the grades, only to be met by this greater problem of the high school group.

*Signs of Growth*—There *is* growth and progress in the health education work; it is shown not only by the amazing rapidity of the growth in the last few years, but also by the form of its development. Slowly but surely it is developing from *within*, becoming an integral part of the school curriculum. It has taken on permanency and assumed the dignity of a recognized member of the educational family. The growing interest of the teacher, the enthusiastic response from the children, are notes of progress. There is life, color, vitality in the health program. Exhibits of health education material spell a story of life in color and action. Health in its manifold relationships to all phases of life obviously is a thing of strength, color, power. It can vitalize all other subjects; both the play element and the realities of life are combined in a wonderful way. Thus is explained its appeal to children; thus is explained the ease with which the health program may be woven into the entire fabric of school life and activity.

*Some Steps in a Year's Growth*—Briefly may be mentioned some of our activities and signs of growth.

*The Playwriting Contest*—Our fourth annual production of the high school health plays for the National Playwriting Contest has just been given at the Copley Theatre, through the repeated kindness of Mr. Clive, the managing director. As a point of review, it might be stated that high school student groups have been enlisted to write a one-act play which is judged for its health message and its dramatic value. We have shone well in the glare of the dramatic footlights of this nation-wide contest.

First, a Massachusetts high school (Fall River) was awarded honorable mention by the National judges; then, the Newburyport High School won the third prize, and last year Southbridge High School had the proud distinction of winning second prize in the National contest. Needless to say, the decision of this year's contest in May is awaited with eager anticipation.

One of the most interesting outcomes of last year's playwriting was the presentation of the Massachusetts prize-winning play at Northfield Seminary a year ago this summer. At the summer session the play "Today's Court of Honor" was presented to a most enthusiastic audience of 1500 people.

*The Teacher's Scholarship Contest*—In recognition of the excellent work done by the classroom teacher, the executive committee last year voted two scholarships for the health education course at Technology under the direction of Professor Turner. This first venture in a new field proved so successful that the executive committee has voted three scholarships for this summer's course in health education. Through the kindness of the Boston Tuberculosis Association, material submitted for the contest will be exhibited and judged at their spacious quarters. Invitations will be extended to teachers and nurses to view a most promising and ambitious display of the classroom activities. Later this exhibit will be taken to Technology for the annual health institute to be held there the last of June.

*The Health Photograph Contest*—This, too, was a new venture which was sufficiently successful to warrant its repetition. More than 150 photographs were submitted in the contest and it was an interesting display of all sizes and shapes of photographs illustrating every possible health activity. There were the children in the rural school in the "clean up" before lunch at the brook, or lined up in a row with their apples, or posed in the dandelion field. In the city school, there were the health corners, the weighing day, the health parade, posture and toothbrush drills. This contest closes in June and again the John Hancock Life Insurance Company offers to print any photographs received which are appropriate as illustrations for their child health pamphlet.

*Our Parochial School Friends*—We have increased our group meetings with Sisters in the various parishes, and no report can be complete without testimony paid to the interest, coöperation and faithful efforts of the Sisters, and the splendid support and endorsement of Father Quinlan, Supervisor of Education, in this eastern archdiocese. Both at the summer institute

*For record and address of author see "This Week's Issue," page 824.

and the fall conference of the Sisters, Father Quinlan gave first place on the program to health and health education. These meetings with the Sisters have shown more than the interest and response recorded in other reports. There has been not only the desire to carry on more health work, but also a definite effort to use our suggestions and material. Every meeting has been followed by a period in which the Sisters have gathered about the table where material has been displayed. Here they have lingered until chapel or convent bell called them to their next duty.

A very encouraging record has been established in the parochial schools of metropolitan Boston. Whereas in September one or two parochial schools owned scales, today in April, every parochial school in the city has scales and a great campaign of weighing has been inaugurated. Underweight children are weighed every month. Many splendid gains in weight have been recorded and the children are taking great interest in comparing their weights at the end of five-week periods on their score cards.

Sisters, too, are not without a sense of humor. One reports that in reply to any question asked, she receives one of two replies. Whatever her question may be, there is one of two answers—"God" or "Milk"!

Much the same kind of report might be given of the public school teachers. Our group meetings with them have shown more interest and response to a definite program—something constructive and positive—and they have been keenly alive to the activities and projects of other teachers in other schools as they have been on display. In one superintendent's opinion, this is one of the best contributions of the educational work—the assembly of material which shows the teacher's own work, the product of her endeavors. Both in the public and parochial school field, this group method has demonstrated its value.

*School Nurses' Conferences*—School nurses' conferences too, are in part a solution of the more effective extension of the message of the modern health education program. The efficacy of the *group method*, as some of our secretaries will testify, has been proved by assembling the nurses for discussion of ways and means to improve and develop the classroom program, showing the way by which the nurse can stimulate and help the classroom program. Instead of travelling miles to one small town after another to see one nurse at a time, the contrasting possibility is obvious, when to an assembled group of fifteen or sixteen nurses, one concentrated effort can be made to present programs and plans, with opportunity for exchange and discussion of both. These conferences, held in coöperation with the State Department nurses, are to be commended for more extensive development.

*Workers' Conference*—One of the outstanding events on the educational calendar was the health education session of the workers' conference held in February. An attentive audience of ninety-six people sat for three hours, and by their manifest interest, enthusiastic comments and reactions gave evidence to the success of this type of conference. In place of a program of methods and plans, devices and discussion of a general program, the meeting was *testimonial*, an experience meeting of the program in action. The success of the meeting was due in part to the personality of the individual speakers. It was also due to the fact that these speakers gave actual evidence of a working, workable program. The speakers included a superintendent of schools, director of health education in the normal schools, a principal of a large building, the classroom teacher and the school nurse. Mr. Richard Schmoyer, newly elected director of physical education and health education in Lynn read a masterly paper on the "Articulation of Health Education in the School Curriculum". This has been published in the *Health Journal* but will receive still greater distribution for it is to be printed as one of a health education series of the League and given to educators and health workers in Massachusetts. We feel this will be a notable contribution to health education programs in the Commonwealth.

*From the Service End*—It seems hardly necessary to speak of our "stock in trade"—our various types of health educational service and material, but it is gratifying to have the increasing number of requests for this "stock in trade" which signifies growth. Our appreciation, our recognition of work well done, is extended to those faithful workers who year after year coöperate so closely, unswerving in their hewing to the line of each new year's call. We welcome, too, the new faces, the new names of those who are gradually becoming acquainted with the League's services. A teacher's letter the other day stated, "I have come from the Pacific Coast and wish I had known before of your organization. Next year I shall wish to avail myself of your services and material." In addition to our increased library circulation and sales of material, and the ever increasing number of requests for the *Bulletin*, a word should be said of the increased number of requests for all kinds of coöperative enterprises in connection with the nation-wide observance of May Day—Child Health Day. Stimulated and encouraged by the very complete and splendid program of Dr. Champion's division of the State Department, every one feels an added responsibility and a quickened ambition to make this May a story of achievement in the Child Health World.

Problems always face us and perhaps the two most outstanding problems of the health education work are:

(1) The health of the teacher
(2) The health of the high school group

Teachers suffer from all kinds of physical

ture, which produce all kinds of mental and nervous complications. There are teachers, far too many, in our classrooms who have wrong mental attitudes, who suffer from the pressure of the overloaded curriculum. All joy in teaching is gone. The inevitable reaction on pupils, in addition to its great liability to the teacher herself, is extremely detrimental. The public health slogan of "Make Yourself a Birthday Present of a Physical Examination" has not reached the teaching profession except in rare instances. One of the nurses in this audience could tell a most interesting story of a teacher whose life has been actually transformed, who has found most radiant joy in her successful pursuit of health. Life had become a wholly different story to her and the result of this on her teaching and her influence with the children obviously is notable. Recently another teacher told of dragging along for years wholly unconscious that her lack of energy and spirit might be explained by preventable ill health. Today, with the removal of her tonsils, and with better diet, she is a living example to her pupils of energy, attractive appearance and radiant health.

*The High School Age*—"Yes, it *is* a neglected age", said a superintendent of schools, "and we are only just beginning to realize *how* very much neglected it is in the very *fundamentals* of health." Within this past week in a prosperous town which boasts a beautiful high school, it was rather startling to find a zero count on physical examinations; no physical examinations, no weighing, for any high school pupils, not even for the members of the athletic teams. This is but another evidence of the need for ever vigilant and vigorous educational efforts.

To meet this high school problem attempts have been made, seemingly slight perhaps, but at least attempts. The playwriting Contest has been a definite but interesting and successful attempt to reach the high school group, to interest them in the expression in dramatic form of modern health problems, health problems in relationship to life. A large group of worth-while health plays is now available for high schools all over the country in addition to the educational value obtained through the writing of the play and the many groups before whom the plays have been presented. Here in Massachusetts we also have the thrilling and spectacular feature of the presentation of plays at the Copley Theatre.

In Massachusetts we have tried also to reach the high school groups in their assemblies, with talks on health in general and the tuberculosis problem in particular. The approach has been made from the economic standpoint and the story of man's gradual thrilling conquest of disease. There has been excellent response from these groups and it is estimated that between five and eight thousand students have been reached with this type of message which seems to appeal to that age group. The National Association has developed also, a suggestive health program to be used in high schools by a joint, coöperative effort of science and hygiene departments. These programs are now in the hands of some of the principals of high schools in which talks have been given and they have promised to report to us before June as to whether such a program can be adopted in their high schools. One of the definite plans of the education department for the near future is the follow-up and extension of this plan which seems a real step in the right direction.

In addition to this, we have distributed a pamphlet called—"The Neglected Age", issued by the National Association, and containing articles by Dr. John A. Smith of that Association and Dr. Walter L. Rathbun of Cassadaga, New York.

Minor problems constantly face us. We teach the washing of hands before each meal, but still we find many, many schools which have either no washing facilities or wholly inadequate ones. It is surprising to find these conditions in larger schools of good-sized towns where one hardly expects both unhygienic and inadequate facilities. It is more to be expected in the rural schools and yet we often find satisfactory facilities in our rural schools. For instance, here is a rural school which at the beginning of the health program had none. In a tiny hall the children have helped to rig a bench, to supply the basin, paper towels and cups. The children share the responsibility not only of bringing fresh water but also of keeping all in good condition. In this tiny space also is another shelf on which a small gas plate cooks the hot lunch for these children who hitherto had nothing but cold lunches.

*Ventilation*—Ventilation is ever a problem. It will take nothing short of a violent explosion in many schoolrooms to move the thermometer from its customary 75 or 80 degrees to the health standard of 65 or 68 degrees. This is really a universal problem, though in pleasing contrast, is the classroom where sit forty boys in light weight blouses in a temperature of 67 degrees, an every day occurrence, and we are gradually acquiring a list of rooms which measure up to this standard.

Whatever growth we can boast in our work, whatever achievement we may count, can be acknowledged only through the support, the willing, cheerful, persistent coöperation of our affiliated organizations. In all directions, in all ways they have set their stage to develop the educational program and no feeble word of mine can fitly express the credit due them and the sincerest appreciation of their loyalty and endeavors. Nor is it possible to express the most grateful appreciation of the privilege and inspiration experienced in working under the leadership of my Chief, with the wise, stimulating

and splendid vision of our honored President.

*A Word to the Future*—Health education has to a great extent been confined to the school field because of the firm belief that children are the hope of the world but health education today reaches and must reach into every channel and avenue of life. Dr. Matthias Nicoll of the New York State Department of Health recently said, "All of the modern discoveries of medical science would be of little avail if they were not put into application by the process of public health education." It is difficult for you and me (to whom this health story is so obvious, so time-worn) to realize that the field still stretches, a vast plain before us for cultivation. Whether it be the man in the factory, the girl in the office, the Americanization class, the labor union, the church group or a child, the health education program today follows certain general fundamental statements as the basis for our program:

That Prevention is possible
That Health is purchasable to a great extent
That it Costs much to get well
That it Costs little to keep well
That Good Health is the greatest asset
That Ill Health is the greatest liability
That it becomes a dollar and cents proposition as well as an avenue to
Greater Efficiency, Happiness, Service.

We know our health education creed for the children's field may be summed up in very familiar language and may be applied quite generally to the larger field. It is a plain obvious truth that delicate children, for instance, are very costly liabilities; we know that these delicate children can be built strong and healthy through right living. We know it is possible for a child to possess this gift by his *own efforts* which are stimulated and aroused by the modern educational methods at camp and in school. We know it is wasted energy and money to have a health program for a summer unless that program functions in continued action. We know ailments, many minor, many preventable in nathat the school through its group organization, its public opinion, its leadership, often can stimulate action and efforts impossible for any other agency, even the home. We know that the mills of education grind slowly but also that they grind exceedingly fine and as efforts and programs develop, the physical growth feeds mental growth. The physical and mental growth establish a balance of emotional well-being which builds toward *the whole child.*

Can we visualize all the possibilities, the significance of growth, efficiency, power which is expressed in an assembly to which you are invited in a fifth grade? Here are found children who are blossoming under the health work of today and their little assembly expresses a significance far deeper than the words would seem to signify. Spirit and Vigor are here. They stand with excellent posture and recite:

"We pledge allegiance to health;
And to the principles for which it stands;
One clean, sound body, one clean mind,
A heart all pure, a strong right hand
With liberal education and good health for all."

The Crusaders' Cheer, a song or the Crusaders' Creed may follow: But perhaps it all may be summed up—all of this health education message, in a poem which the children love dearly:

MY HEALTH HOUSE

I am building my Health-House day by day,
As I eat and sleep and work and play.
My food is the lumber that I use,
And the best materials I must choose
(Such as milk and vegetables, fruit and eggs)
While Fresh Air furnishes nails and pegs;
And Sleep, the carpenter, takes them all
To silently fashion each room and hall.

If I build aright, when I am grown
I shall have a house I am proud to own.
No need for breakdowns and repairs,
For good material wears and wears.
So I'm building my Health-House day by day,
As I eat and sleep and work and play.
Some build for Happiness, some for Wealth;
But I'll find both in my House of Health.

—*Rispah Goff Howell.*

Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R. C. CABOT, M.D.

F. M. PAINTER, A.B., ASSISTANT EDITOR

## CASE 14151

## HEMATURIA, DYSPNEA AND ACUTE ARTHRITIS

### MEDICAL DEPARTMENT

A married colored woman twenty-four years old was sent from the Out-Patient Department January 21.

Five months before admission she took cold, had headache and generalized lameness and vomited. She was in bed until the end of November. The vomiting became severe and finally stopped. During the second month she had cough and some dyspnea. Late in November her left great toe became swollen and tender and the ankle swollen. From the end of November until the day of admission she had worked; the cough and dyspnea had increased, and she had urinated twice at night. For the past four weeks her ankles had been swollen at night, normal by morning. She had had pains about her heart for the past three weeks. A week before admission her right ankle became red, tender and too painful to walk on. This was now better. She thought she had passed more urine than usual recently. For four days her micturition had been painful and her urine very red. Since the onset her appetite had been poor, her bowels irregular. She had lost twenty-two pounds and was very weak. The day of admission she had palpitation.

Her family history is good. Her past history is irrelevant. Recently she had taken half a glass of ale daily. She had not menstruated for five months.

Clinical examination showed a poorly developed, emaciated, nervous young woman with pale and slightly cyanotic mucous membranes. Apex impulse of the heart felt in the fifth space 10.5 centimeters from midsternum, 1 centimeter outside the nipple line, corresponding with the left border of dullness. Right border 2.5 centimeters to the right. Action regular, rapid. Sounds of fair quality. A loud musical systolic murmur, best heard at the apex but transmitted all over the precordia to the axilla and both backs. A short systolic thrill at the apex. Pulmonic second sound greater than aortic second and accentuated. Pulses and arteries normal. Lungs normal. Liver dullness from the sixth rib to two centimeters below the costal margin. Edge indistinctly felt, very tender. Both ankles slightly swollen, the right more than the left. Extreme tenderness over the bony projections of the joint. No edema. Pelvic examination: cervix in the axis of the vagina, not enlarged or soft, freely movable. Fundus not made out. Culs-de-sac free. Pupils, knee-jerks and plantars normal.

Amount of urine normal, specific gravity 1.005 to 1.010, smoky or cloudy at all of 20 examinations, high colored at 16, red at two, alkaline at 13, neutral at one, a trace to a very large trace of albumin at all, red blood cells at all, in large numbers at 7. A catheter specimen showed many red cells, no casts, a few squamous epithelial cells. 13 of the last 15 specimens (not catheterized) showed few to many leukocytes. Blood: 12,500 to 24,000 leukocytes, polymorphonuclears 79 per cent. to 85 per cent., reds 2,540,000 to 3,750,000, slight to moderate achromia, anisocytosis and poikilocytosis, slight polychromatophilia in one of three smears.

Temperature at entrance 97.2°, afterwards 98° to 103.1°. Pulse 75 to 142. Respirations 21 to 50.

By January 24 the soreness was gone from the ankles and the patient was doing well. The pitch of the murmur changed from C on January 23 to A on January 29. February 1 a blood culture showed no growth. No cause for the urinary condition was found. February 5 a musical murmur at the apex replaced both sounds. There was no presystolic. The patient had night sweats and anorexia. The cough was better, the general condition not so good.

February 9 cystoscopy showed blood issuing from both ureteral orifices, more from the left. The bladder was practically normal.

February 13 the character of the murmur at the apex had changed again. The musical tone was gone and the murmur was harsher. The urine contained more and more pus.

February 17 the pulse suddenly became weak and running, and was almost imperceptible at the wrist. The cough became more harrassing. Early the next morning the patient died.

### DISCUSSION

BY RICHARD C. CABOT, M.D.

#### NOTES ON THE RECORD

"She had not menstruated for five months". That fact seems to be significant, showing that there had been important illness going on during the whole period of five months. What is the nature of that illness? We ought to guess previous to physical examination. The most definite thing is these two attacks of arthritis. I do not see any reason for not calling it acute infectious arthritis. It might be gonorrheal. It is more likely to be "rheumatic," that is, of un-

known bacteriology. Besides that we have dyspnea and cough, which together with the joint symptoms make us think of the heart, also we have vomiting in the beginning. We do not hear anything of gastro-intestinal symptoms towards the latter part of the illness. I guess we are right in not paying much attention to those and in supposing they were either those characteristic of the onset of any infectious disease or possibly were influenced by medication. The type of medication that is given in these cases—salicylates—often leads to vomiting.

### NOTES ON THE PHYSICAL EXAMINATION

There is a suggestion of slight enlargement of the heart, but nothing that we should want to stake our eternal salvation on if we had no other evidence than this. The thing that we ought to be told, and are not told, is whether this murmur replaces the first sound or not. I think there is a real importance in that. The so-called functional murmurs, those not associated with anything found in the heart post mortem, generally accompany the normal heart sounds but do not take the place of them. A systolic thrill, if we can be sure it is a thrill, is certain evidence of organic heart disease. I do not think there is any reason to make that statement less absolute. But there are many things called thrills that are not such. So many men were rejected from the British army on account of "thrills" during the war that the order came not to consider thrills at all. When a man is excited his apex impulse feels very much like a thrill unless one is an old hand at the matter. So we must take this as evidence of organic heart disease. We shall inquire later what type of organic heart disease.

The tenderness of the liver edge is an important point, as evidence of a congested liver.

There is presumably some inflammation of the ankle joint, but no edema.

In the pelvic examination we have no evidence of any gonorrheal infection.

I understand that in twenty examinations the gravity of the urine never varied except within these limits. That is important if true. If we have a large number of examinations, some of them are pretty sure to be at different times of day, and if they are at different times of day we have pretty good test of the capacity or incapacity of the kidney to concentrate urine,—as good evidence as we could get by a special test made for that purpose. In twenty examinations the variation was only from 1.005 to 1.011, and that is strongly suggestive of hyposthenuria or loss of the power to concentrate, which is one of the most reliable of the symptoms of nephritis. The catheter specimen is of course the only one we can trust as to sediment.

I can see by the number of this case that it was quite a number of years back (1910). We were not doing then (and I think very few hospitals if any were doing) the tests for retention products, blood urea nitrogen, etc., or the functional test for measurement of the kidney function. Also we notice no blood pressure measurement. So that we have now all the evidence we are going to have about the kidney.

There is secondary anemia such as we expect with the diseases that we are thinking of.

The chart shows a continued fever practically for four weeks, with the pulse most of the time at 120. Nobody ever had continuous fever for that length of time, so far as I know, from nephritis. She must have something else.

I must have taken care of this patient, because nobody else records the pitch of musical murmurs. We say that a change of pitch should go with a change in the shape of the vegetations on heart valves.

On February 5 we have a diastolic murmur, which makes us feel surer, of course, of our diagnosis.

### DIFFERENTIAL DIAGNOSIS

Unless all the cards are stacked against us we ought to come out right on this diagnosis. We have a patient who shows signs of heart disease and signs of infection, who runs a four weeks' continuous fever with sweats and leukocytosis, who has in the end double heart murmurs, which have been shown to shift in pitch, who has also the signs of joint infections which so often go with a subacute bacterial endocarditis, which is what this ought to be. Most of these cases have a certain amount of incompetence of the heart, partly, I suppose, mechanical, and partly due to the weakening of the muscle from the infection itself. We expect to find some chronic passive congestion of the lungs. We expect to find some enlargement of the heart. We expect that there will be a fibrous or calcareous lesion underneath the more vegetative lesion on the top. Where? We have nothing to point to the aortic valve. Next to that the mitral is as common as any, but in most of these cases we find more valves involved than we have expected during life. So I think it is a good chance that there will be more valves involved, though on the face of the returns we cannot say so.

The absence of a blood culture and the absence of any signs of embolism of which we can be sure—I say of which we can be sure, because there is suggestion, certainly, of renal embolism in all this—hematuria—makes us somewhat less certain of our diagnosis. On the other hand this is a disease very frequently associated with a glomerulonephritis, so that we do not need to suppose emboli in order to account for that hematuria. Other than those possible renal emboli I do not see any suggestion of emboli elsewhere. But that state of things is not unknown in cases of known subacute bacterial endocarditis. The same is true of the blood culture. Posi-

tive blood culture means something, negative means nothing.

A PHYSICIAN: Does not a fixation of gravity mean chronic nephritis, or can it occur from kidney infarcts?

DR. CABOT: I think I can remember here cases where we have been shown at post-mortem extensive infarctions or emboli without nephritis, with fixation of gravity.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Malignant endocarditis.

DR. RICHARD C. CABOT'S DIAGNOSIS

Subacute bacterial endocarditis.
Probably chronic endocarditis of the mitral and other valves.
Hypertrophy and dilatation of the heart.
Chronic passive congestion, general.
Renal embolism?
Acute glomerulonephritis?

ANATOMIC DIAGNOSES

1. *Primary fatal lesions.*

Subacute vegetative endocarditis of the mitral valve.
Septicemia.

2. *Secondary or terminal lesions.*

Septicemia, streptococcus mucosus capsulatus.
Hypertrophy and dilatation of the heart.
Chronic passive congestion, general.
Infarcts of the spleen and one kidney.
Lobar pneumonia, right upper and middle lobes.
Subacute glomerulonephritis, intracapillary and capsular.

3. *Historical landmarks.*

Obsolete tuberculosis of two mesenteric lymph nodes.

DR. TRACY B. MALLORY: A vegetation was found on the mitral valve. The other valves were negative. Infarcts were present in the spleen and kidneys. There was also a glomerulonephritis, not involving all the glomeruli but picking out individual ones here and there,—the so-called focal nephritis which is probably embolic in nature. It is at least most common in subacute bacterial endocarditis.

There was also a terminal pneumonia, lobar in type, of which no suggestion was given in the history.

The cultural studies on the case require some interpretation, since the terminology of 1910 is not that of the present. The organisms were grown on blood serum and streptococci were found in medium length chains with capsules, and the diagnosis of streptococcus mucosus capsulatus, which presumably is what we now call a Type III pneumococcus, was made. Occasionally other streptococci may be encapsulated in the body, although I should not expect them to show capsules on culture medium. Without a bile solubility test it is impossible to be certain what organism they had. On the whole I think it is probable that it was a Type III pneumococcus, which is relatively uncommon as a cause of subacute bacterial endocarditis. It is possible that the organism grown was simply a terminal invader from this pneumonia of the last few days and that they failed to recover the organism that was the cause of the bacterial endocarditis.

DR. CABOT: How big was the heart?

DR. MALLORY: 285 grams,—a little small.

DR. CABOT: Was there any passive congestion?

DR. MALLORY: There was a moderate degree, of the liver and spleen.

DR. CABOT: Any old endocarditis behind the fresh?

DR. MALLORY: No record is made of it.

A PHYSICIAN: Was the liver large?

DR. MALLORY: Normal in size,—1600 grams.

## CASE 14152

## EARLY SYMPTOMS OF NEURITIS; SUBSEQUENT INVOLVEMENT OF SPINAL CORD. ANACIDITY. BLOOD NOT CONSISTENT WITH PRIMARY ANEMIA. IMPROVEMENT BOTH BEFORE AND AFTER TAKING LIVER

NEUROLOGICAL DEPARTMENT

An unmarried American hairdresser thirty-five years old entered the hospital October 4 complaining of weakness and stiffness of the legs.

She was well until two years before admission. That summer the edges and tip of her tongue were very raw and tender for several months. In the autumn she was under great physical and mental strain, and became considerably weaker. In November her hands became numb to pain, touch and temperature. The death of her mother in December brought on a general mental and nervous breakdown. She had not been able to work since that time. In January after an attack of influenza her legs became gradually weaker, so that she was unable to walk very long without stumbling. Since that time the rectal sphincter had been incontinent at times. February 20, eight months before admission, she went to the Out-Patient Department in a run-down condition with numbness of the hands. On examination the arm reflexes were not obtained. There was some ataxia, some paresis. Knee-jerks slight. Right ankle jerk normal, left not obtained. No clonus or Babinski. Swaying in Romberg. Fundi and cranial nerves normal. A blood Wassermann was negative. After a visit away from home she felt particularly well and her hands became entirely normal. She con-

tinued, however, to have "nervous upsets", as she had for years. Her legs gradually became stiff and her feet tired very easily and sometimes doubled up under her. In August the middle third of the upper surface of the tongue was sore for two weeks. September 25 the spinal fluid and another blood Wassermann were negative. Since that time she had felt drowsy. At admission her legs were stiff but she was able to walk for a short time with support. Her hands were not numb. She had poor control of the anal sphincter. Her appetite was very good, especially for acid foods. Her bowels moved once a day with cathartics.

Her mother died of pernicious anemia and arteriosclerosis. She had pallor, weakness, stiffness of the legs and frequent stumbling like the patient.

At thirty-two the patient's hair quickly turned gray. For the past eight or ten years she had had palpitation, vomiting, incontinence and "biliousness" with her nervous upsets. Sometimes she would vomit only her breakfast after being nauseated. At other times the vomiting continued for two or three days, ending with the vomiting of greenish bitter fluid and with a slightly greenish color to her skin. The last attack was in July, fifteen months before admission. From January to August before admission she urinated every fifteen minutes by day and was incontinent, but did not urinate at night. She had been gaining weight lately.

Clinical examination showed a well nourished woman with gray hair. The skin of the hands and wrists showed areas of loss of pigmentation. The lungs, heart and abdomen were negative. Neurological examination showed the cranial nerves negative, the arm reflexes active. Abdominal reflexes obtained in the upper quadrants, not in the lower. Leg reflexes active. Left knee-jerk and ankle-jerk greater than right. Ankle clonus; left ten seconds, right one to two seconds. Babinski and Oppenheim not obtained. Sensation seemed normal over the head, neck, chest and upper extremities down to the level of the umbilicus, where she seemed to note sharp and dull objects and cold more than above. Hypersensitive to pain and temperature over both lower extremities. Some motor weakness of both lower extremities. She was unable to stand without falling forward.

Urine 33 to 71 ounces. A catheter specimen showed no albumin, sediment, 15 leukocytes per high power field, culture, no growth. Another specimen showed specific gravity 1.018, the slightest possible trace of albumin. Blood: 10,000 leukocytes, 61 per cent. polymorphonuclears, hemoglobin 80 per cent. at two tests, reds 4,040,000 to 5,080,000, slight achromia, anisocytosis and poikilocytosis, platelets somewhat diminished. Fasting contents of the stomach: 40 cubic centimeters of light yellowish mucoid material, free hydrochloric acid 0, total acid 5, guaiac positive. Microscopic examination showed 10 to 15 leukocytes and 8 to 12 red cells per high power field and considerable numbers of motile bacilli and cocci; no starch. Test meal: free hydrochloric acid 0, total acid 7, guaiac negative. Hematocrit: cell=40 per cent. of total blood volume.

Temperature 97.9° to 99.4°, pulse 73 to 89, respirations normal.

X-ray evamination showed no abnormalities of the stomach, duodenum, or ileum. Tenderness was elicited over the lower end of the cecum. Appendix seen. Its motility was somewhat limited and it was pointed to the left, beaded in appearance. There was definite tenderness over it. The remainder of the colon was negative.

With 50 drops of dilute hydrochloric acid with each meal the patient was very comfortable and had no complaints.

It was found that the tongue was not atrophied, and that the blood smear showed a definitely abnormal but not at all marked variation in the size of the reds and rare moderate sized tailed microcytes. October 13 the neurological picture was possibly somewhat improved. The hands showed almost no ataxia. The ataxia paraplegia was perhaps improved. The walking continued about the same. October 16 she was discharged.

February 13, four years and four months later, she reported that she was quite well. There were no paresthesiae. Gait and station were almost normal. Babinski was still positive on the right, and there was marked postural sense disturbance in both feet. She was regularly following the treatment prescribed.

## Discussion

BY JAMES B. AYER, M.D.

This is not a post mortem case, but it has a number of points of clinical interest and is worthy of discussion on the basis of data that we have.

After her mother's death in December she evidently had some psychic and some physical difficulty. Earlier symptoms were apparently prodromal. Now we come to something that is more definite, something that comes in a fairly acute manner. The loss of sphincter control is the most definite thing of all, I think. It is fair to say that when we have sphincter difficulty we have either a patient with a very severe cerebral disturbance so that he is incontinent because he is perhaps not conscious, or semiconscious, or does not pay attention, or we have a moderately severe cord affection. When either sphincter becomes relaxed it is fair to assume, if it is neurological at all, that this sphincter disturbance indicates a spinal cord lesion of considerable gravity, and coming with the stumbling and numbness or "anesthesia" as it is called, it sounds very much like a rather severe spinal

cord affection, not at one level only but diffuse, because the arms also are involved.

"Paresis" means weakness, not paralysis. We are not told whether paresis refers to the arms or to the legs. Again they should specify. We do not know whether there was any plantar reflex or whether it was a normal one. It obviously was not an abnormal one, as indicative of pyramidal disturbance. But in a case of diminished reflexes such as we have here it is very likely that the plantar was diminished, which is significant.

The record does not say how long this improvement lasted, but a transitory numbness of the hands makes us think of a good many things, —physiological disturbances such as one meets with occasionally, but more especially mild neuritides may act that way. Neuritis from different causes is the most common of pathological conditions that will act this way.

There is stiffness and weakness coming on insidiously after she had apparently got better, so far as the arms were concerned, so that we may well be dealing with a progressive spinal cord disorder which has changed its character.

I have just looked up this spinal fluid and I find that it is entirely a normal test,—the total protein 36, one cell, globulin zero, gold sol 0000000000, and the pressure relations normal.

I think all we can say from this history is that at this time she has a perfectly good story for a severe diffuse cord condition which has in a way passed by, leaving her with something that has come on, these sensory symptoms at first with numbness of the arms, particularly of the hands, then developing weakness of the rectal sphincter, and later still a condition suggesting pyramidal tract disturbance with spasticity and with weakness of the lower legs.

One should think, of course, in a condition like this, very much of pernicious anemia with cord symptoms, and it is largely because we want a discussion on the cord symptoms of pernicious anemia that this case was used.

About heredity in pernicious anemia I do not feel competent to say anything. It is interesting that the mother's symptoms should have been similar to the patient's.

There are gastro-intestinal symptoms in the picture which have not come out before except for the tongue. Perhaps I should leave these for some medical consultant. There is nothing very definite here. They certainly do not suggest strongly any surgical condition nor do they suggest very strongly the crisis that we see. Perhaps they are intercurrent, perhaps accompaniments of the anemic situation, if it exists.

In women we do not pay much attention to abdominal reflexes. If we get them well and good. I am talking about stout women or women who have borne children. That applies also to fat men, especially to anybody who has lost weight, where the abdominal walls are relaxed.

There is ankle clonus now. That was not mentioned before.

With lively reflexes, ankle clonus and spastic gait it seems likely that we have disturbance of the pyramidal tract, and perhaps on another examination Babinski would have been obtained.

At this time, before the laboratory report is taken up, when she comes in after this period of diminished reflexes and periods of numbness and even anesthesia, we have weakness, which is now associated with spasticity. We have still the sphincter disturbance, we have a sensory disturbance which apparently is a hypersensitive condition rather than anesthesia. I take it that is the objective examination, and that is for pain and temperature and tactile sense. Hypersensitiveness below the umbilicus is consistent with a more or less localized or perhaps a diffuse cord lesion. Whatever evidence we had for a cord lesion in the arm condition seems to be in abeyance at the present time. We now have a picture which is primarily referable to the legs, and if there is anything localizing it would seem to be in the lower cord. The brunt of the attack now seems to be borne by the pyramidal tract. A spastic paraplegia is what is indicated by this examination.

Clinically this case might be pernicious anemia with combined system disease. It is interesting that the blood was never characteristic. Dr. Minot was asked to look at the blood and was unwilling to make a diagnosis of primary anemia, although stating that the blood picture was not inconsistent with this disease.

What is the range of combined acid value?

Dr. Cabot: This is low.

Dr. Ayer: This is low and the free hydrochloric is absent.

So we have a blood which gives no evidence of an inflammatory process, which is consistent with a mild anemia, which is not characteristic of primary anemia but which might be primary anemia; a gastric analysis which is quite characteristic of anemia. There is nothing of value in the temperature, pulse or respiration.

One would not expect much change in any spinal cord condition in this short time. If anything there was a tendency toward improvement.

One thinks first of a multiple neuritis I think especially in the very beginning when she had so many sensory disturbances, with numbness of the hands and arms, and when it disappeared in a short time, again we think of multiple neuritis. We think of the various types of exogenous and perhaps endogenous neuritis. But when the picture cleared up with the improvement in the sensory condition of the arms and left a spastic paraplegia, then one had to admit that it was not neuritis but much more serious and involved the cord.

There is a good deal of discussion about neuritis today. Apparently one can have a typical

peripheral multiple neuritis where only the extremities are involved, where the terminations of the nerve fibres are affected, then clearing up. One may have on the other hand affection of the nerve trunks, we will say the brachial or the sciatic plexus. That is a more severe form of multiple neuritis. And then we may go back further and have a radiculitis, which means that the roots are affected; and when the roots are affected the spinal cord is affected directly or indirectly. So we can speak of a combination that is really a meningomyeloneuritis. In other words, there is a meningitis, there is some inflammation of the cord, and there is also a neuritis.

In infectious influenza, so-called, we not infrequently see this picture of what looks like neuritis, and then when we see the whole picture we say, yes, there is a myelitis. As I see it, this picture is perfectly compatible with such a condition, a myelitis with a radiculitis and perhaps a mild meningeal condition going with it. On the other hand we have a good clinical picture for a combined system disease going with a primary anemia.

The subsequent picture is summarized very quickly. I saw this patient recently. From a person who could not walk at all she was walking in such a way that I think no one would stop to look at her to see what was wrong. But when she turned quickly she was thrown off her balance a little, and when one examined her there was a little postural disturbance, the Romberg was slightly positive, and the reflexes were probably slightly pathological.

She is a dressmaker and she sews, but when she gets tired she finds that she does not hold the needle quite right. It feels awkward. Our examinations show nothing in the arms, so that from the arm point of view she is all right except when tired. From the leg point of view she is almost well. But we find evidence that she has had a disturbance of the spinal cord which fits, to my mind, the picture of either a combined system disease (associated with primary anemia, which we never have demonstrated), or with a diffuse myelitis, or a radiculitis with myelitis.

It seems a little hard to bring anything else into play. Syphilis must always be considered. It would seem as if we had thrown it out symptomatologically, and no treatment has been given. It could hardly be any tumor of the cord. Multiple sclerosis is the other disease, with syphilis, that we should always consider in such cases. We have nothing in favor of multiple sclerosis. Our diagnosis must lie in combined system disease or in an infectious condition which we will call a myelitis.

She did very well before she was put on liver, so that it is not necessarily liver which has brought her through.

DR. CABOT: How do you picture to yourself the changes that have gone on in the cord between the time when she was at her worst and the present time?

DR. AYER: I have had occasion only once to see a good acute myelitis, and that one showed—and other descriptions agree—a grossly soft cord, usually diffuse but more or less localized. In this case it was a combination of pressure and infection. The cord was liquefied and microscopically showed a disintegration of both fibers and cells, particularly the fibers. The motor cells showed swollen bodies and were evidently undergoing degeneration. There was also a certain amount of low-grade aseptic meningitis. I think in a less degree this was the case here. There must have been much physiological disturbance but little destruction, except in the pyramidal tracts and the posterior columns, and the reason it affects these two tracts is that they run the whole length of the cord and are therefore vulnerable over a great distance.

DR. CABOT: Have you ever known a case like this to show as much improvement without liver?

DR. AYER: Yes. We have had a case only two months ago in the ward, a man who also had a history of infection, who also became worse than she, who had a level about at the clavicles, and without liver treatment the level dropped and finally his legs began to come back. He went out with almost no sensory disturbance, and walking. There we had evidence of an inflammatory process by finding forty-odd cells in his fluid. It probably was not syphilis. I think it was myelitis. From the combined system disease point of view we had last year a woman who did pick up remarkably under liver diet, in whom the diagnosis was quite certain. It was a very striking improvement both with regard to the parasthesiae and with regard to the spasticity.

I have just gone over a series of anemia cases with Dr. Richardson. He is pessimistic about the neurological cases. On the other hand he admits that he has seen none go downhill, and he has seen a good many come up.

This patient went out, as I remember it, with both diagnoses. I think that is quite correct. I do not see how we can be sure.

DR. CABOT: Isn't your conception of this disease one in which an unknown cause may damage either the blood or the spinal cord or the tongue and the stomach or any combination of these, but which does not need to damage all of them at once?

DR. AYER: You mean the primary anemia?

DR. CABOT: I do not like to call it pernicious anemia. I like to think of it as a disease which may show the symptom anemia, which may show the symptom myelitis, but is not an anemia or a myelitis itself.

DR. AYER: I think so, because we certainly have a number of cases which have the nerve

symptoms for quite a while before the blood picture shows positive.

DR. CABOT: It seems to be very interesting that we had the tongue and gastric symptoms here exactly as we should with an anemia, showing that it is not the anemia that produces these symptoms but the unknown cause that hits at all those organs simultaneously.

DR. AYER: I am rather skeptical about this being that disease. I am rather inclined to myelitis, and that I suppose is a toxic disease and quite different from the other. This is a reason for bringing it up.

A PHYSICIAN: To what extent can hysteria simulate this organic disease?

DR. AYER: Very closely. But repeated examinations would certainly not show these findings. Hysterical parasthesia is not at all unheard of, but almost always there is complete sensory loss, which this patient never did show, and of a glove character, not root and not nerve distribution. In this case the reflexes were different in the two sides, nothing like hysteria. I do not think we could possibly confuse this with hysteria.

A PHYSICIAN: Do you ever get ankle clonus in hysteria?

DR. AYER: Yes, frequently. But you probably would not get it consistently.

DIAGNOSIS

Combined system disease (without demonstrable primary anemia), or
Diffuse myelitis.

## ERRATUM

In Case 14142, May 24, 1928, Dr. Allison's discussion should be followed on Page 773 only by the final diagnosis, osteomyelitis of the upper end of the femur and ilium. The heading "X-ray Interpretation December 6" and the paragraph printed below the diagnosis were inserted by an error.

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*Communications should be addressed to The New England Journal of Medicine, 126 Massachusetts Avenue, Boston, Mass.*

## RABIES

IN this issue of the JOURNAL appears an article by Dr. Rosenau on "Rabies—The Treatment of Wounds and the Prevention of the Disease". This article is particularly timely. There are still individuals, more especially sentimental dog lovers but including, we regret to say, an occasional physician, who question that rabies is a disease of dogs. Some even go so far as to say that although dogs may have the disease it is never communicated by them to human beings. With two human deaths from rabies in the Commonwealth last year and one so far this year, it scarcely seems that any further discussion of this point is necessary. 826 cases of rabies in animals were reported in 1927, which is the largest number ever reported in this State. Efforts at control by the Division of Animal Industry of the Department of Conservation and the Department of Public Health by quarantine of licensed dogs and destruction of the stray dogs were not supported by public opinion so far as available evidence is at hand.

Evidently then, with the present temper of the people, even with rabies epidemic in Eastern Massachusetts, we must fall back on the Pasteur preventive treatment of exposed individuals. Dr. Rosenau has discussed at length and gives figures on one of the newer modifications, namely, the Semple method. This has met with favor because of the relative infrequency of paralytic complications; it is economical and simple and the virus may be preserved for shipment. It is apparently quite as efficient and fully as safe as any other modification of the Pasteur treatment.

The important question in connection with the prevention of rabies in humans is when to use prophylactic treatment. The State does not furnish the treatment. If the individual is able to pay, obviously he should pay any costs in connection therewith. If he is unable to pay (and the local board of health determines this fact), then treatment is furnished by the local board of health. Whenever an individual is bitten by a known rabid dog, treatment should be started at once. In the article referred to Dr. Rosenau treats in detail the proper procedure in regard to the various situations that may be encountered in regard to the biting animal. Physicians, many of whom may not have been faced with these problems in recent years, should familiarize themselves with these situations in order that when they meet them they may advise promptly and accurately. As in two recent deaths when inoculations were refused, for the physician to say that he discussed treatment is not enough. He must use all the powers of persuasion that he possesses to overcome the widely disseminated propaganda of ridicule. Health authorities will reinforce him in individual cases if he but asks it.

It is the very effectiveness of the prophylactic inoculations that gives the appearance of credence to such propaganda. Without them the many hundreds of persons who would have died last year would shock the public out of listening to the philanderings of pseudo-science. Let the physicians feel a responsibility to educate their clientele in this matter that a public opinion may be developed which must form the basis of concerted community effort, which will rid our State of this disease as has been done in Australia, England, Norway, Denmark and Sweden.

## DR. EVARTS A. GRAHAM'S VISIT TO MASSACHUSETTS

THE medical profession is shortly to have the opportunity of hearing Dr. Evarts A. Graham, a distinguished American Surgeon, who through his knowledge of chemistry, skill in the technic of difficult operative procedures and spirit of research has contributed to an unusual degree to medical and surgical progress.

In the field of thoracic surgery he has, among other contributions, devised a successful method of operative treatment of chronic lung suppura-

tion by cautery pneumonectomy. He has advanced the knowledge of the effects of open pneumothorax by showing that the resulting danger depends not only on the size of the opening, but on the vital capacity. This conception is of practical importance in many aspects of thoracic surgery. It has been of especial value in leading to the abandonment of early open drainage in acute empyema complicating pneumonia, and the substitution of closed methods of evacuation at a time when the vital capacity is so low that an opening of any size may be fatal. For his work in open pneumothorax he was awarded the Samuel D. Gross prize in Surgery for 1920.

The Trudeau Society extends a cordial invitation to hear him speak on Monday evening, June 4, at 8:15 in John Ware Hall, the subject being "Remarks on Pulmonary Suppuration."

Dr. Graham's investigations have not been confined to surgery. He is most widely known for the introduction of cholecystography in 1924, by the use of a radio-opaque substance permitting X-ray visualization of the gall bladder. The "Graham test" of gall bladder function is the most important addition to the methods of diagnosis of gall bladder disturbance since the advent of the X-ray in its application to medicine and surgery.

We welcome the opportunity to hear Dr. Graham's Shattuck Lecture on "Some Functional Tests and Their Significance" at the meeting of the Massachusetts Medical Society at Worcester, Tuesday evening, June 5.

## The Immediate Need of a Home for The Massachusetts Medical Society

THE action of the Boston Medical Library in its votes reported in the JOURNAL of last week gives promise of a brighter future for the Medical interests of Massachusetts. If the Library is now ready to join with the Massachusetts Medical Society in providing quarters for both organizations and for such other allied interests as may properly unite with them, a step will have been taken which may be of great public benefit. Any such movement looking toward improved public health may expect financial support from outside the medical profession. Such outside support is essential to the success of any large plan.

As yet however no concrete plan has been suggested about which those interested in any great movement in this direction may rally. It may require several years before the various organizations of the State which may advantageously be housed in one building can be brought together to present their needs in a convincing way to those who must give the necessary funds.

Meantime the Massachusetts Medical Society must raise from its own members and loyal friends funds for its own quarters. To this the Society is committed. Those who give for this purpose may feel sure that the Council will look into the future and will take no step today which will prevent more progress in subsequent years. The Society is the most important medical organization in the State. It will welcome the coöperation of other organizations which will work in common for the best interests of the whole Commonwealth.

## THE COST OF MEDICAL CARE

THE economic features of medical practice both in application to the recipient of service and the practitioner have been subjects of interest and discussion in recent years. The burden of illness imposed by the immediate cost and further invasion of earning capacity of the sufferer involving diminution of the income upon which his dependents rely for sustenance are too often serious handicaps in the struggle for existence.

The conditions are so often demonstrated that they are accepted as a feature of life. Considerable study has been given to the problems involved and many organizations are trying to meet the needs of individual cases. The fundamental causes of inability to meet the cost of illness are however very imperfectly understood.

The announcement of the formation of a body dedicated to the task of placing the underlying causes before the people has aroused much interest and editorials have appeared in many of the leading newspapers of the country commending this undertaking.

The committee in charge of the studies is composed of representatives of various types of social agencies, public health organizations and physicians. A certain amount of money has been given for inaugurating these studies, plans have been formulated, expert investigators put at work and the committee is meeting regularly to supervise and direct its employees.

The available funds, however, are only sufficient to make a beginning. At least five years of careful intensive study will be necessary in order to bring definite information to bear on these complicated problems.

How will the necessary expense in extension of the early efforts now underway be met?

This country stands as the wealthiest among nations. Thousands of individuals have more money than can be advantageously used for personal needs and great wealth is concentrated in organizations founded on the purpose of serving humanity.

Adequate support for these studies will be forthcoming if the appeal is convincing, but those in charge are warranted in demanding that money will be well used.

The medical profession is under the obligation of satisfying itself of the standing of those who are committed to this task because it has a definite interest in the whole scheme and especially in that part of the program which is concerned in the practice of medicine.

The distributors of funds designed for the

betterment of humanity will ask if the medical profession endorses the plan. A united profession will make the work of the committee much easier and medical societies may very properly give evidence of approval by such contributions as may be reasonable.

It is proposed to ask state and other medical societies to appropriate money for the use of the committee. Such contributions may not be large but they will stand as demonstrations of endorsement and thereby encourage more liberal endowment by the more wealthy bodies.

## THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

WHITE, FRANKLIN W. S.B., M.D. Harvard, 1895. Instructor in Medicine, Harvard; Visiting Physician, Boston City Hospital. His subject is: "Studies of the Redundant Colon". Page 783. Address: 322 Marlborough Street, Boston.

ROSENAU, M. J. A.M., M.D. University of Pennsylvania, 1889. Professor of Preventive Medicine and Hygiene, Harvard Medical School; Professor of Epidemiology, Harvard School of Public Health. His subject is: "Rabies, The Treatment of Wounds and Prevention of the Disease". Page 787. Address: Harvard Medical School, Boston.

QUINCY, JOSIAH E. B.S., M.D. Northwestern University, 1921. Clinical Assistant Massachusetts Eye and Ear Infirmary; Associate Staff, Faulkner and Children's Hospitals. His subject is: "Bilateral Cavernous Sinus Thrombosis". Page 791. Address: 270 Commonwealth Avenue, Boston.

WILLIS, A. MURAT. M.D. Medical College of Virginia, 1904. F.A.C.S. Professor of Surgery, Medical College of Virginia; Chief Surgeon to Allied Hospitals, Richmond, Va.; Senior Surgeon to Johnston-Willis Hospital, Richmond, Va. His subject is: "The Mortality in Some of the Common Surgical Conditions". Page 794. Address: Johnston-Willis Hospital, Richmond, Va.

PARDEE, KATHARINE. B.A., M.D. Johns Hopkins, 1918. Fellow in Medicine Mayo Clinic, 1920-23. Assistant Physician, Smith College, Northampton, Mass., 1924-27. Address: 151 West 105 Street, New York City. Associated with her is

GORDON, FAITH FAIRFIELD. S.B., M.D. Boston University, 1923. Assistant to the Medical Director at Smith College. Address: 65 New South Street, Northampton, Mass., and

RILEY, CATHRYN V. M.D. Johns Hopkins Medical School, 1922. Address: 2141 LeRoy Place, Washington, D. C. Their subject is: "Vincent's Infection". Page 796.

CHEEVER, AUSTIN W. A.B., M.D. Harvard, 1914. Chief of Service Skin and Syphilis Department of the Boston Dispensary; Dermatologist at the Cambridge Hospital and the Brockton Hospital. His subject is: "Progress in Syphilis, 1927". Page 799. Address: 472 Commonwealth Avenue, Boston.

EMERSON, KENDALL. A.B., M.A., M.D. Harvard, 1901. F.A.C.S. Chief of the Surgical Service and Orthopedic Surgeon Memorial Hospital, Worcester, Mass.; Member of the New England Surgical Society; President of the Massachusetts Tuberculosis League. His subject is: "President's Report". Page 805. Address: 21 High Street, Worcester, Mass.

KIERNAN, FRANK. A.B., Executive Secretary Massachusetts Tuberculosis League. His subject is: "Annual Report of Executive Secretary". Page 806. Address: 1149 Little Building, Boston.

JOHNSON, ANNA. Graduate of State Normal School, Lowell, Mass. Formerly Executive Secretary Lawrence Tuberculosis League, now Educational Secretary Massachusetts Tuberculosis League. Her subject is: "Educational Report". Page 811. Address: 1149 Little Building, Boston.

# The Massachusetts Medical Society

## ANNUAL MEETING OF THE COUNCIL

THE Council will meet in the Ball Room of the Hotel Bancroft, Worcester, June 5, 1928, at 12 o'clock, noon.

BUSINESS

1. Reading minutes of last meeting in abstract.
2. Reports of Standing Committees in order of appointment. (See inside front cover of official program for committees and their order.)
3. Reports of Special Committees, namely: Committee of Nine; Committee on Insurance; Committee on New England Medical Council; Committee on Clinics; Committee on Woman's Auxiliary in Massachusetts; Committee on a Permanent Home for the Society.
4. Approval of Revised By-Laws, as amended.
5. Election of Officers and Orator for 1928-1929, by ballot.
6. Appointment of Standing and Special Committees for 1928-1929, on nomination by the President.
7. Incidental business.

WALTER L. BURRAGE, *Secretary.*

Brookline, May 29, 1928.

**The usual Cotting Lunch will be combined with a Buffet Luncheon to Fellows that will be served immediately after the Council meeting. Councilors are reminded to sign one of the two attendance books before the meeting.**

## BOSTON MEDICAL LIBRARY

### Physiotherapy

American medicine of the last thirty-five or forty years has been characterized by "therapeutic nihilism". Convinced of the futility of much of the old school dosing and equally skeptical of the reaction from that, the profession has followed its own individual tastes to a large extent in the matter of therepeutics. The public could not be relegated to a drugless practice but the habit of prescription writing became one of the lost arts. Manufacturing Chemists supplied the lack of compound prescriptions by flooding the market with proprietary preparations and so the atavistic desire of the human being for tangible methods of routing disease from his system was satisfied. So far as professional interest in the subject is concerned Physiological Chemists and Pharmacologists have been active, particularly along the lines of specific serum therapy.

Since the World War in America there has been a pronounced revival of interest in physiotherapy. This is of course not new, for in the days of Hippocrates and the Aesclepiadae there were many Institutes in Greece and elsewhere at which baths, massage and physical culture were strongly emphasized. Patients were brought to these places for prolonged treatment and they were invariably localities having a reputation for a salubrious climate or waters possessed of medicinal qualities. Heliotherapy was also employed. Americans have been too busy to give up the time to these measures. We have also been too wasteful of energy and even of health and life itself. It has taken a realization of the need for taking better care of the employed in industry that has really forced us to take cognizance of what has been the custom in the industrial countries of Europe for many years. The Great War has played its part as well. The medical profession as a whole, up to that time, took but little interest in the matter and opposition to the charlatan character typical of much of the practice tended to keep even the more intelligent members of the profession away from its study or practice. There was no instruction along these lines provided in the schools. Visitors to Europe brought back from time to time accounts of the Institutes existing there, in almost every industrial center of any size, subsidized by Industry for the purpose of restoring to productive activity at the earliest possible moment those who had fallen victims to accident or compensable illness.

We are making some attempts at a very poor imitation of the work of these foreign Institutes. We are still adhering to many questionable, old methods and adopting without adequate and convincing tests as to efficacy, every new device that comes along and are consequently in no position to say how much good is being done and indeed are still subject, far too justly, to the accusation of commercialism in many of our methods, but still we have headed in the right direction and eventually, when there has been aroused a wider professional understanding of what real worth resides in massage, hydrotherapy and heliotherapy, combined with what may yet be more positively asserted to be had from electrotherapy, we shall have added a valuable asset to the physician's armamentarium. Education in the Medical Schools, in the Department of Therapeutics, is an essential step toward attaining this goal. In pursuit of this idea a small book by Thomas Brown published in Albany in 1817, entitled the "Ethereal Physician" will be found amusing and entertaining. Included in it is an extract from a "Treatise on Electricity" by Tiberias Cavallo writen in 1785. This author points to the early use of the knowledge of electricity as a means for the treatment of disease. This small volume of Brown's is in the Library and represents a type of the early literature on physiotherapy which has attained a volume now altogether astonishing and as yet for the most part so chaotic in its arrangement and so often unscientific and extravagant in its claims that it is difficult to cull the wheat from the chaff.

## MISCELLANY

### DINNER TO DR. WILINSKY

A memorable event took place on Tuesday, May 22, at the Copley-Plaza Hotel, when a number of the friends of Dr. Charles F. Wilinsky assembled at a dinner given in his honor and to celebrate his acceptance of the directorship of the Beth Israel Hospital.

Preceding the dinner a blessing was asked by Rabbi Samuel J. Abrams. Commissioner Francis X. Mahoney, in whose department Dr. Wilinsky has served as director of the Boston Health Units, introduced the toastmaster of the evening, Dr. George H. Bigelow, Commissioner of Public Health of Massachusetts. Dr. Bigelow enthusiastically undertook his duties and a rather long program was brilliantly and agreeably upheld by his wit and satire.

Dr. John W. Bartol, President of the Boston Health League, as the first speaker traced the development of Dr. Wilinsky as practitioner, school physician and health official. Dr. Bartol was followed by the Reverend Father O'Conor, Director of the Catholic Charitable Bureau, who told of his experiences with Dr. Wilinsky in establishing the health units, and bore witness to his intelligence, his humanity and his tact. The other speakers were: Judge A. K. Cohen, President of the Federated Jewish Charities; Mr. Homer N. Calver, Executive Secretary of the American Public Health Association; Dr. Alexander S. Begg, Dean of the Boston University School of Medicine and Chairman of the Committee on Public Health of the Boston Chamber of Commerce; Professor Milton J. Rosenau, who told of his experiences with Dr. Wilinsky in the Holy Land; Dr. Eli C. Romberg, representing the Jewish physicians supporting the Beth Israel Hospital; Dr. Harry Linenthal, Chief of the Medical Staff, who stressed the value of the hospital as an agency of public health, and Mr. Albert A. Ginsberg, President of the Board of Trustees.

The Honorable James M. Curley, former Mayor of the city, then presented Dr. Wilinsky with a beautiful hall clock on behalf of his friends. Dr. Wilinsky, in replying, told many of the details of his work in the field of public health, and promised that all his ability would be turned towards making the Beth Israel a hospital of the first rank.

A reportorial account of this dinner gives no information and no idea of its real significance. Its real significance lies in the fact that on an evening last week physicians, lawyers, clergymen and business men; Jews and Gentiles, Catholics and Protestants united in doing honor to a Jewish physician of outstanding merit; a man who is an honor to his profession and who has given unstintingly of himself in the interests of the public. He has been elevated to a position and promoted to a task of great responsibility in his profession and the JOURNAL joins with his other friends in congratulating him on his past achievements and in wishing him well for the future.

## A COURSE IN HEALTH EDUCATION

The first course in Health Education for workers in Continuation Schools is to be offered by Teachers College, Columbia University, in the fall of 1928.

According to the announcement made, Professor Wood, Professor Rowell, Miss Phelan, and additional special lecturers will give instruction in this course. When interviewed recently Professor Wood said: "The opportunities for pioneer work in health programs in continuation schools are often unappreciated. Working adolescents must be helped to understand their health possibilities and limitations, and they should be taught simple practicable measures for attaining and maintaining their optimum health. The habits, attitudes, and knowledge needed for working adolescents are specific—it is not only a problem of living healthfully but of working heathfully. Every teacher in the continuation school has a definite contribution to make to the health and efficiency of these adolescents, and the contribution of every teacher is essential. The time in continuation school is brief and every possible opportunity for health teaching must be used, with due consideration of other educational needs."

The new course is planned to meet the specific needs which have been clearly recognized in a thorough, constructive study now being made in the New York City Continuation Schools, and this course is to be given at the request of the Committee directing that project. Practical problems of the adolescent worker will be studied. Among subjects to be considered are Safety and First Aid in the job; posture and the job; nutrition for the worker; etc.

In addition, it should be known by those interested, that Professor Thomas D. Wood was a member of the committee of the Child Bureau in Washington some years ago, which worked out Physical Standards for Working Children. Professor Rowell was Director of the Health Program of the New Bedford schools, and as such, had the organization and direction of the health program in the Continuation Schools. Dr. Rowell has also written many articles on this subject. Both Dr. Wood and Dr. Rowell have been active in the demonstration now under way in the New York City Nutrition study of working adolescents under the appropriation of the committee on Scientific Research of the American Medical Asssociation and have published numerous articles in professional and medical magazines.

This course is approved by the New York Board of Examiners, and accepted for credit toward a teaching license for continuation schools. John D. McCarthy, Director of Health Education for the New York City Schools will also be one of the lecturers.

## VACCINATION IN ORDER

The outbreak of smallpox in Middletown, Connecticut, last winter has been followed by a few cases in Bristol, Connecticut this month.

Massachusetts has a few cases. Reports at hand do not indicate a common source of infection.

A conflagration usually starts as a little flame. A smallpox epidemic starts with a few cases.

Up to May 23, four cases had been found in Boston. Vaccinations will be carried on between the hours of 10 to 12 in the forenoon and from 7 to 9 P. M. daily at Health Units of the City of Boston Health Department.

It is time for doctors to call attention to the wisdom of vaccination of all persons who have not been immunized within recent years.

## RÉSUMÉ OF COMMUNICABLE DISEASES IN MASSACHUSETTS

### APRIL 1928

#### GENERAL PREVALENCE

The total number of cases of communicable diseases reported for April was the highest in recent years.

This month recorded the highest reported incidence of measles for any April since the disease was made reportable in 1893. This is the third consecutive month in which this event has occurred. At the present rate the yearly incidence will exceed the high record year of 1920.

The reported incidence of lobar pneumonia, scarlet fever, chicken pox, mumps, anterior poliomyelitis, diphtheria and non-pulmonary tuberculosis was within endemic limits.

The incidence of influenza was low, and that of German measles the lowest since 1920. A new low April record has been established for pulmonary tuberculosis. For the year to date, 8 per cent. fewer cases have been reported than for the corresponding period in 1927, in which year a new low record was established.

For the fifth consecutive time a new low monthly typhoid fever record has been reached. In February, in March, and again in April, a new low record for any month in any year was recorded. There were no deaths for typhoid fever recorded in March of this year. This is the first time in the history of the Department that a month has gone by without a typhoid fever death.

#### RARE DISEASES

*Anterior poliomyelitis* was reported from Lowell, 1; Lynn, 1; Malden, 1; Natick, 1; Quincy, 1; Swampscott, 1; total, 6.

*Anthrax* was reported from Malden, 1; total, 1.

*Dog-bité requiring anti-rabic treatment* was reported from Belmont, 1; Boston, 9; Chelmsford, 3; Lowell, 20; Milford, 1; Newton, 3; North Andover, 1; Quincy, 1; Revere, 7; Springfield, 1; Taunton, 1; Winthrop, 2; total, 50.

*Encephalitis lethargica* was reported from Boston, 3; Lynn, 2; Woburn, 1; total, 6.

*Epidemic cerebrospinal meningitis* was reported from Brockton, 1; Chelsea, 1; Framingham, 1; Lynn, 1; Malden, 1; Medford, 1; Quincy, 1; total, 7.

*Leprosy* was reported from Boston, 2; total, 2.

*Pellagra* was reported from Northampton, 1; total, 1.

*Septic sore throat* was reported from Boston, 6; Fall River, 1; Granby, 1; North Adams, 1; Plymouth, 1; total, 10.

*Tetanus* was reported from West Springfield, 1; total, 1.

*Trachoma* was reported from Boston, 2; Cambridge, 1; Chelsea, 4; Lowell, 1; total, 8.

MONTHLY REPORT OF CERTAIN COMMUNICABLE DISEASES.

| DISEASE | Cases in Entire Population | | | | Case Rates per 100,000 Pop. | | |
|---|---|---|---|---|---|---|---|
| | Apr. 1928 | Apr. 1927 | Prosodemic Index | Epidemic Index | Apr. 1928 | Apr. 1927 | Expected Rate*** |
| ALL CAUSES | 12,437 | 9,080 | - | - | 287.6 | 212.7 | - |
| Ant. Poliomyelitis | 6 | 4 | 10* | .6** | .1 | .1 | .2 |
| Diphtheria | 338 | 377 | 394* | .9** | 7.8 | 8.8 | 9.1 |
| Measles | 6,436 | 1,406 | 5,657* | 1.1** | 148.8 | 32.9 | 130.8 |
| Pneumonia, Lobar | 663 | 511 | 539* | 1.2** | 15.3 | 12.0 | 12.5 |
| Scarlet Fever | 1,129 | 2,015 | 1,313* | .9** | 26.1 | 47.2 | 30.4 |
| Tuberculosis, Pul. | 431 | 446 | 402* | 1.1** | 10.0 | 10.4 | 9.3 |
| Typhoid Fever | 11 | 26 | 19* | .6** | .3 | .6 | .4 |
| Whooping Cough | 823 | 625 | 979* | .8** | 19.0 | 14.6 | 22.6 |
| Chicken Pox | 655 | 971 | - | - | 15.1 | 22.7 | - |
| German Measles | 73 | 92 | - | - | 1.7 | 2.2 | - |
| Influenza | 84 | 65 | - | - | 1.9 | 1.5 | - |
| Mumps | 998 | 1,720 | - | - | 23.1 | 40.3 | - |
| Tuberculosis, O. F. | 88 | 68 | - | - | 2.0 | 1.6 | - |

* This Index is an attempt to estimate the number of cases based on the trend during the past years which can be expected to occur, and is for the purpose of comparison with the number of cases which actually did occur.

** This ratio expresses how prevalent the disease is compared with the index mentioned above; 1.0 indicates that the actual number of cases equals the expected number. A larger number means a greater prevalence, and a smaller number a lesser prevalence than expected. Thus, 2.0 would indicate twice the expected number of cases, and .5 half the expected number of cases. The method used to determine the indices is described in the August 18, 1927 issue of the Boston Medical and Surgical Journal.

*** Calculated from the Prosodemic Index.

## ASSIGNMENT TO DUTY AT MARINE HOSPITAL, CHELSEA, MASS.

Surgeon H. V. Stroupe has been relieved from duty with U. S. Coast Guard, Charlestown Navy Yard, Mass., and assigned to duty at the Marine Hospital, Chelsea, Boston, Mass. May 5, 1928.

## INCREASE OF LIFE SPAN

Professor Ira V. Hiscock of the Department of Public Health of the Yale School of Medicine in addressing the National Conference of Social Work at Memphis this month pointed out that the life expectancy of the baby of today is 19 years greater than that of the infant born in 1850. Professor Hiscock states that, if existing knowledge of measures for health promotion and disease prevention were generally applied, at least ten years more might be added to the average life span.

## NEW JERSEY'S INFANT DEATH RATE

Dr. Elizabeth C. Tanday, director of the Statistical Division of the Children's Bureau, has recently stated that New Jersey, with an infant death rate of 35.8 per 1000 live births during the period 1921-1926, had the lowest rate of any one of 10 eastern States, and the lowest for the United States birth registration as a whole.

## NATIONAL MEDICAL ASSOCIATION OF CHINA

The National Medical Association of China has recently issued, on the occasion of the Seventh Biennial Conference, an interesting and valuable medical guide, serving as a directory of medical institutions and practitioners in that country. In it are included a medical map of Peking, a list of Chinese physicians, an illustrated description of the various medical institutions in Peking and in China as a whole, classified according to their major activities in public health, leading institutions and hospitals.

## MASSACHUSETTS EYE AND EAR INFIRMARY

The report of the Managers of The Massachusetts Eye and Ear Infirmary for 1927, has to do mostly with the physical changes and improvements which have taken place in the institution during the year. Most important has been the completion and occupation of the new building connecting the Infirmary with the Out-Patient wing of the Massachusetts General Hospital. By this addition greater and improved out-patient facilities have been added and space in the Infirmary has been freed for such innovations as the Howe Laboratory of Ophthalmology, an enlarged nurses' dining room, a rest room for women clerks, and better accommodations for the administrative office. Great and much needed improvements in the children's ward have also been made possible.

## COMPARISON OF DISEASE INCIDENCE IN CONNECTICUT WITH 1927 AND SEVEN YEAR AVERAGE WEEK ENDING MAY 12

| | 1928 | | | | | 1927 | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Wk. ending Apr. 21 | Wk. ending Apr. 28 | Wk. ending May 5 | Wk. ending May 12 | Average cases reported for week corresponding to May 12 for past seven years. | Wk. ending Apr. 23 | Wk. ending Apr. 30 | Wk. ending May 7 | Wk. ending May 14 |
| Actinomycosis | - | - | - | - | - | - | - | - | - |
| Anthrax | - | - | - | - | - | 1 | - | - | - |
| Botulism | - | - | - | - | - | - | - | - | - |
| Cerebrospinal Men. | - | 3 | 2 | 1 | 1 | 1 | - | 1 | - |
| Chickenpox | 85 | 68 | 65 | 96 | 60 | 44 | 78 | 112 | 96 |
| Conjunctivitis Inf. | 1 | 8 | 5 | - | 5 | 1 | - | 1 | - |
| Diphtheria | 24 | 29 | 23 | 24 | 34 | 31 | 26 | 22 | 20 |
| Dysentery, Amoebic | - | - | - | 1 | - | - | - | - | - |
| Dysentery, Bacillary | - | - | - | - | - | - | - | - | - |
| Encephalitis, Epid. | 1 | 1 | 1 | 2 | - | 1 | - | - | - |
| Favus | - | - | - | - | - | - | - | - | - |
| German Measles | 16 | 17 | 18 | 23 | 28 | 11 | 17 | 34 | 10 |
| Hookworm Infection | - | - | - | - | - | - | - | - | - |
| Influenza | 5 | 17 | 85 | 71 | 6 | 1 | 3 | 4 | 3 |
| Leprosy | - | - | - | - | - | - | - | - | - |
| Malaria | - | - | - | - | - | - | 1 | 1 | - |
| Measles | 363 | 354 | 370 | 381 | 232 | 58 | 50 | 51 | 58 |
| Mumps | 196 | 210 | 104 | 151 | 42 | 38 | 53 | 45 | 36 |
| Paratyphoid Fever | - | - | - | - | 1 | - | 1 | - | - |
| Pneumonia (Broncho) | 60 | 46 | 45 | 62 | 34* | 38 | 26 | 26 | 34 |
| Pneumonia (Lobar) | 62 | 59 | 71 | 70 | 36 | 55 | 44 | 75 | 34 |
| Poliomyelitis | - | - | - | - | - | - | 1 | - | - |
| Scarlet Fever | 47 | 77 | 66 | 98 | 90 | 106 | 99 | 103 | 105 |
| Septic Sore Throat | - | - | - | 1 | 2 | 2 | 6 | 3 | 3 |
| Smallpox | - | - | 5 | - | 3 | - | - | - | - |
| Tetanus | - | 1 | - | 1 | - | - | 1 | - | - |
| Trachoma | - | - | - | - | - | - | - | - | - |
| Trichinosis | - | - | - | - | - | - | - | - | - |
| Tuberculosis (pul.) | 32 | 34 | 36 | 27 | 33 | 22 | 39 | 35 | 36 |
| Tuberculosis (o.f.) | 13 | 6 | 9 | 7 | 3 | 2 | 7 | 6 | 6 |
| Typhoid Fever | 1 | - | 1 | 2 | 6 | - | 1 | 1 | - |
| Typhus Fever | - | - | - | - | - | - | - | - | - |
| Whooping Cough | 114 | 115 | 113 | 105 | 51 | 20 | 31 | 60 | 67 |
| Gonorrhoea | 45 | 21 | 37 | 39 | 22 | 47 | 8 | 20 | 15 |
| Syphilis | 39 | 68 | 36 | 35 | 28 | 32 | 14 | 16 | 12 |

*Average for three years. Made reportable January 1, 1925. Remarks: No cases of cholera, Asiatic, glanders, plague, rabies in humans and yellow fever during the past seven years.

## RECENT DEATHS

**SUMNER**—Dr. Harry Herbert Sumner, of Lowell, died at Rutland, May 20, 1928, aged 56.

Dr. Sumner was a graduate of Baltimore Medical College in 1901 and settled in practice, that year, in Lowell, joining the Massachusetts Medical Society. He is survived by his widow, who was Miss Edith West.

**WHITE**—Dr. Leon Edward White, a specialist in diseases of the ear, nose and throat, died at his home in the Chestnut Hill section of Brookline, May 18, 1928, at the age of 60.

He was a native of Barton, Vt., born July 30, 1867, the son of Orra A. and Emily B. (King) White. He studied at Dartmouth, and following his graduation in 1890, he took the medical course at the college and was graduated from this three years later. Early in his career Dr. White practiced for a few years in Roxbury. During 1897 and 1898 he was house surgeon at the Massachusetts Charitable Eye and Ear Infirmary, and from 1898 to 1905 he was assistant surgeon there. For several years he was otologist to St. Elizabeth's Hospital.

Besides being a fellow of the American Medical Association and the Massachusetts Medical Society he held membership in the American Academy of Ophthalmology and Otolaryngology, the American Laryngological Association, the American Laryngological, Rhinological and Otological Society, the American Otological Society and the New England Otological and Laryngological Society.

He is survived by his widow, G. Maude White, formerly of Wakefield, and by his son Dr. Leon Edward, Jr., who has shared his father's Boston office, in the practice of the same specialty and by a daughter, Dr. Priscilla White, of Audubon Road, Boston.

**STONE**—Dr. Moses Cornelius Stone, a retired Fellow the Massachusetts Medical Society, died at his home in Wellesley, May 19, 1928, at the age of 86. He leaves a widow, a son and two daughters. He was a graduate of Bowdoin College in the class of 1865 and of New York University Medical College in 1868. He was an active member of the Bowdoin Club of Boston.

## OBITUARY

### HIDEYO NOGUCHI, M.D.*

Dr. Hideyo Noguchi, of the Rockefeller Institute for Medical Research, died at Accra, West Africa, Monday, May 21, 1928.

Dr. Noguchi gave his life for humanity in a scientific endeavor to discover the relation between South American and African yellow fever. The results of the bacteriological studies made by him in South America proved inapplicable to yellow fever as it exists in West Africa. Although not himself in the best of health, and at his advancing age, he insisted, against the advice of many friends, in undertaking the arduous expedition. His work in Africa was completed, and he planned to sail for New York on May 19, when, a few days before, he was himself stricken with yellow fever. Dr. Noguchi had weighed well the dangers of the undertaking and went, on what unhappily proved the last of an extraordinary number of successful scientific expeditions, prepared to make the extreme sacrifice. Fortunately, the results of his studies will not be lost. Others will take them up where he was compelled to leave them,

HIDEYO NOGUCHI, M.D.

although it is too much to expect that anyone can carry them to final completion and publication as brilliantly as Dr. Noguchi himself, had he been spared, would have done.

Dr. Hideyo Noguchi was born on November 24, 1876, at Inawashiro, Yama County, Fukushima, Japan. He studied medicine at the Tokio Medical College from 1893 to 1897 and received the license to practise medicine from the Japanese Government in 1897.

From 1898 to 1900 he was assistant in the Government Institute for Infectious Diseases, Tokio, and during this period he held a lectureship in bacteriology at the Tokio Dental College.

Dr. Noguchi came to the United States in 1900 and joined the pathological staff, under Dr. Simon Flexner, of the University of Pennsylvania. He remained at the University of Pennsylvania until 1903, having been designated research assistant to the Carnegie Institution of Washington, and then continued his studies at the Statens Serum Institute in Copenhagen, under Dr. Madsen. In 1904, at the founding of the laboratories of the Rockefeller Institute in New York, he joined the original staff of that institution and became one of its original members. This title he held at the time of his death at Accra, West Africa, of the after-effects of an attack of yellow fever.

Dr. Noguchi was awarded a titular professorship by the Department of Education of the Imperial Japanese Government in 1911. He was the recipient of many honorary degrees, including the Ph.D. degree of the Imperial University of Tokio in 1914. In 1923 he was elected to membership in the Imperial Academy of Japan, and in 1924 he was awarded the medal of the Society of Japanese as one of the ten greatest Japanese. Among the institutions conferring honors on him are Yale and Brown Universities in the United States, and the Sorbonne in Paris. Numerous honors have been conferred upon him by various South American countries

*Furnished by the Rockefeller Institute for Medical Research.

where he worked on yellow fever. In 1921 he received the John Scott Medal from the City of Philadelphia. He was also a chevalier of the Legion of Honor, a Knight of the Royal Order of Isabella of Spain, of the Royal Order of Dannebrog (Denmark), and of the North Star (Sweden). In 1915 he received the Emperor's Medal and Premium from the Imperial Academy of Japan, and the Order of the Rising Sun was conferred upon him. He is a member of many scientific societies in the United States and in foreign countries.

Dr. Noguchi was a distinguished bacteriologist and was ranked among the most eminent of all time in that field. His earlier scientific work was on the biology of the venoms and antivenins, the Carnegie Institution of Washington publishing his monograph on Snake Venoms in 1909. Later he studied with extraordinary success the bacteriology of the spirochetes, a number of which he cultivated artificially for the first time. Dr. Noguchi was the first to demonstrate *Treponema pallidum* in the brain of paretics and to transmit syphilitic infection to rabbits by means of brain tissue from persons succumbing to paresis. In 1915 he first cultivated a bacteria-free vaccine virus in the tissues of rabbits, an accomplishment of great practical value in providing a pure virus for purposes of vaccination. In 1918, Dr. Noguchi served on the Yellow Fever Commission sent by the International Health Board of the Rockefeller Foundation to Guayaquil, Ecuador, and it is noteworthy that he lost his life while investigating yellow fever in West Africa for the Rockefeller Foundation, to which he was loaned by the Rockefeller Institute.

In recent years Dr. Noguchi has isolated the microörganism *(Bartonella bacilliformis)* from the blood of fatal cases of Carrion's disease (Oroya fever) and the associated skin nodules, *verruga peruana*, of Peru. He was able to reproduce the human disease in monkeys by means of the cultures obtained. This achievement settled the long disputed problem of the relation of Oroya fever to verruga.

During 1926, Dr. Noguchi cultivated from the eyes of American Indians suffering from trachoma a bacillus which reproduces trachoma in *rhesus* monkeys and in chimpanzees. Through this accomplishment the much mooted question of the nature of trachoma has been solved.

In the death of Dr. Noguchi bacteriological science has lost one of its most brilliant and original investigators, and the Rockefeller Institute one of its most eminent scientific workers, and one of its most charming and deeply respected members.

In 1911 Dr. Noguchi married Mary Dardis, who survives him.

## CORRESPONDENCE

### OFFICIAL ACTIONS BY THE BOARD OF REGISTRATION IN MEDICINE

As a result of the meeting of the Board of Registration in Medicine held May 24, 1928, the following actions were taken:

Drs. Peter Kane and Francis F. Henderson—Case laid on the table until the next meeting of the Board.

Dr. Everett D. Hooper—Registration revoked. Involved in abortion.

Dr. Joseph N. Pelletier—Case placed on file.

Dr. Philip Nicol—Case placed on file.

FRANK M. VAUGHAN, *Secretary.*

### THE CAUSE OF HEART SOUNDS

61, Walter Road, Swansea, Wales,
March 31st, 1928.

*To the Editor*, THE NEW ENGLAND JOURNAL OF MEDICINE.

Dear Sir,

First of all I wish to offer you my best wishes when starting your second 100 years of existence, and I trust that it will be a very happy as well as a very useful period.

Secondly I desire your help to try and determine definitely the cause of the heart sounds, because I feel that unless we are able to know how the normal sounds are produced it is quite impossible to satisfy ourselves as to the causation of the abnormal sounds.

It is now nearly a hundred years since the heart sounds were first recognized or at least considered to be of clinical value, and this was brought about as the result of Laennec's discovery of the stethoscope, and about ninety years ago there was published by Lea and Blanchard of Philadelphia a book called "Watson's Practice of Physic" in which the author tells us "Respecting the physical causes of these natural sounds, there have been much discussion and research."

Watson proceeds to tell us that "I have no doubt that the second sound is produced mainly, if not altogether, by the sudden shutting of the flood-gates placed at the mouths of the two great outlets of the heart. . . . There is no other tenable mode of accounting for the sound."

As to the first sound the author says "chiefly it consists of the sound that results from the muscular contraction of the ventricles."

The dogmatic teaching of those days has become the tradition of to-day, but I feel it is time that the whole question should be reconsidered in order that we may be in a position to draw right conclusions from our auscultations.

May I point out that a muscle when it contracts products no sound, and therefore the ventricular contraction cannot be the cause of the first sound. Even if the muscle were the cause of the sound, we ought in pericardial effusion to have that sound conducted most readily across the fluid, whereas no such conduction takes place.

As to the cause of the second sound, I feel we are too ready to think that the thin valvular flaps are able to strike together with such force as to cause this sound. These flaps simply move in fluid and with that fluid and not in air, consequently their vibrations if any must be so restricted as to be unable to give rise to a sound. As everybody knows it requires at least fifty vibrations per second before one is able to hear any sound, and then only a deep bass one: under such circumstances these fluid-enveloped flaps cannot possibly vibrate even fifty times a second, whilst after their destruction when they cannot come into contact the sound is intensified into a murmur.

In connection with the Auscultatory method of taking the blood pressure we are told that Gallavardin and Barbier "have established two zones in the curve of sound: one caused by whorls in the blood current and another composed of sounds originating in the vessel wall". I ask in all seriousness how can these sounds owe their origin to the vessel wall? and as to a sound being caused by a whorl a mere

reference to a dictionary will suffice to expose the foolishness of such an explanation, i. e., if words mean anything.

Personally I think that the sounds of the heart are due to the moving fluid in the pericardium, and they can be easily reproduced by water in a small rubber balloon. In support of my theory I would like to draw attention to the fact that it is the same energy which passes up the tube of a stethoscope to produce the sounds as that which passes up the tube of a cardioscope to produce the cardiac curves, and if as in pericardial effusion the fluid accumulates its movements become more restricted; as a consequence no sounds are produced and also no curves are formed on the cardioscopic paper. . . .

Yours very truly,

C. A. STEPHENS, M.D.,
*Consulting Cardiologist King Edward VII Welsh National Memorial Association for the Treatment of Tuberculosis.*

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COMMENT ON THE LETTER FROM DR. C. A. STEPHENS

The mechanism of the production of heart sounds and murmurs has been the subject of study for many years and there seems little or no doubt that the sounds are produced as follows:

The first sound of the heart is caused by the combination of two effects, muscular contraction and the closure of the mitral and tricuspid valves.

The second sound of the heart is produced by the closure of the pulmonic and aortic valves.

The third sound of the heart, which is a normal event, sometimes accentuated, is probably produced by the opening of the mitral and tricuspid valves.

That muscular action can produce sounds is easily demonstrated. For example, if one places the stethoscope over any superficial muscle in the body and contracts this muscle, a definite, fairly loud sound is the result. If the muscle is kept contracted. there is a continuous distant roar, resembling the sound from a seashell held against the ear. That valves of pumps may cause sounds when they open and close is also a well-recognized physical phenomenon and the heart is primarily a pump. It has never been demonstrated that pericardial fluid can produce sounds unless air is also present in the pericardium. Such sounds are like the succussion or splash when there is pneumohydrothorax and these sounds are absent on shaking the chest when there is fluid without air in either the pleural cavity or the pericardium.

Furthermore, when there is hypertension there is frequently accentuation of the aortic second sound and when there is mitral stenosis there is frequently accentuation of the pulmonic second sound. This accentuation is due to the increased pressure against the aortic and pulmonic valves as they close.

PAUL D. WHITE.

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## THE STAFF DOCTOR UNDER COMPENSATION

*To the Editor of the* NEW ENGLAND JOURNAL OF MEDICINE:—

The Committee of the Middlesex South District Medical Society appointed last October on the classification of insured patients, sent out a questionnaire in December, 1927. About seventy were sent to the Superintendents of the larger hospitals in all the industrial cities, except Boston, and to some twenty towns. The writer was assigned the task of tabulating the replies.

Information was obtained from every industrial city outside of Boston except one, and twelve towns reported. Forty-two hospitals returned answers to the questionnaire. Six hospitals provided information by letter and there were personal reports from staff representatives of nine hospitals, giving altogether dependable information from fifty-seven hospitals. Previous to April 18, 1928, the data showed that forty-nine hospitals classified insured cases as private, semi-private or intermediate. Eight or ten hospitals reported that similar action was under consideration by the trustees. The hospitals reporting this classification permit the members of the staff to charge for medical service and a large number maintain an open staff. Nearly all the hospitals reported that in most cases the insurance companies recognized their obligation for payment.

The March 22nd issue of the NEW ENGLAND JOURNAL OF MEDICINE gives the viewpoint of the Medical Advisory Committee of 1920, also the decision of the Board in the case of Martin H. Spellman, M.D., versus the Travelers Insurance Company. It is very evident that the viewpoint of the staff doctors connected with the community hospitals is very different from the recommendation by this Advisory Committee which the Industrial Accident Board adopted. The Advisory Committee also reported that "there has been bitter feeling, often expressed because of the ruling that in effect often forces hospital physicians to treat insured cases for nothing", the information obtained indirectly through the questionnaire discloses the fact that there is a universal deep-seated feeling of unfair treatment among staff physicians outside the teaching hospitals, that cannot be explained on the ground of a mercenary motive. It is the firm conviction of the writer that the viewpoint of the staff doctor connected with the community hospitals has never been fully explained to the Accident Board. We understand that this Advisory Committee has not been called to function since the recommendation quoted was given. The viewpoint given was largely, if not entirely, influenced by the conditions prevailing in the large teaching hospitals. These hospitals have a large intern service, giving instruction to students, graduates and others seeking experience and instruction as specialists. The patients understand in advance that they lend their persons to be used for clinical instruction. The writer can understand the practical difficulty of apportioning fees to staff doctors in these institutions, where most of the personal care is given by students, or young graduates anxious for the experience, and the personal contact with the staff doctor is usually very slight.

The issue as stated by the Board "is whether or not the insurance companies should be charged with the payment for service rendered by staff doctors in hospital cases coming into the hospital in the usual course". The Special Commission of 1926, reporting in 1927, see page 12, expresses the opinion that the extent of the free service given by the staff should be determined by the hospital trustees rather than the Industrial Accident Board. While this opinion does not have the force of Statute Law, it does seem to both hospital trustees and staff doctors in line with good common sense. Certainly a large per cent. of hospitals have acted under legal advice along this line as the questionnaire has shown.

The Compensation Law places no new burden on

either hospitals or physicians. Under the old regime the injured worker quite often sought hospital aid as a charity patient and if severely injured might require aid for his family. Under the Compensation Act his status was changed. He no longer occupied a twin charity hospital bed. In exchange for the risk he assumed as an industrial worker he was guaranteed by Massachusetts law compensation for time lost, with hospital and medical care. The burden was transferred from his own shoulders and placed on the consuming public. The worker in boots and shoes, woolen or cotton goods, electric machinery and rubber goods, no longer became a charge on his local community, the local hospital and the local physician, as a fit subject for charity. The burden of his care being transferred to the far reaching consuming public; instead of being a local burden he became a state or nation-wide public beneficiary, with the guarantee of the State that those aiding him are entitled to reasonable fees for adequate service. The insurance companies were designated as *public servitors for a profit.** Section 30 grants to local hospitals and local physicians the right to draw on the consuming public, the law providing reasonable fees for adequate service, personally given. Under Section 30 it is hard to conceive of the reasonableness of free medical service. Under free service 4% of the population bear the burden. The share of the consuming public in 1925, the last published rates, was between 1/5 and 1/4 of one per cent. of the value of the manufactured product, or from $.20 to $.25 on each $100 worth of products consumed. The burden is not heavy when shared by those designated to bear it under the Law. If necessary and adequate medical service is given free, do not either the consuming public, or the insurance companies benefit? Is it conceivable that the legislature intended to draft a substantial group of professional citizens to render free service for the benefit of a business group, or the consuming public? Has not a competent physician equal right with any worker for compensation for his time, skill and technical training, when seeking to save human life or restore the injured worker to active service? Because humanity demands emergency treatment should this voluntary service warrant increased tolls to profit seeking interests? Local staff physicians are doctors usually chosen because they are able to render efficient service to the community, rather than those seeking the position for the needed experience. If individual hospital physicians attempt to profiteer let it be reported to trustees and staff physicians. They can take proper action.

The Council on Medical Education and Hospitals of the American Medical Association decrees that a general hospital with 100 beds is the minimum equipment for a worth-while intern service. The intern service is limited, when there is any, in most of the hospitals considered. Fully half of the hospitals in this group are on the accredited list of the American College of Surgeons. When the staff doctor gives free service to charity patients or to those who can only afford a less than cost hospital rate, in the opinion of the writer, he has met his legitimate obligation to the hospital and community.

Wherever the regulations of the hospital permit and the patient is allowed to select his own physician, the fact that a staff doctor exercises the relationship and responsibility of a private physician actually rendering the needed service personally, makes it hard to understand the reasonableness of any quibble over free service, or whether the doctor is chosen by the hospital, the patient, or the insurer. The staff *doctor* does the *needed work*, the *patient* receives the *benefit* and the insurer *collects the premium to pay a reasonable fee* for adequate service under Section 30.

GEORGE E. WHITEHILL,
*Secretary Hospital Conference Committee*
*Middlesex South District Medical Society.*

*Instead of granting community rights to insurance companies in all hospitals.

## COMMENTS ON AN EDITORIAL

*To the Editor of the* NEW ENGLAND JOURNAL OF MEDICINE:

Dear Sir:

The writer of a recent editorial in the NEW ENGLAND JOURNAL OF MEDICINE under the caption "Is It True?" demands an explanation, or as he puts it, a public disclaimer of certain conditions which exist in the Out-Patient Department of the Boston Lying-in Hospital, to which he takes exception, having obtained his information from a recent magazine article published by a student in the Harvard Medical School. This article, though in some respects inaccurate, is evidently the student's recollection of his experiences while on service on the District, and while harmless in itself, has evidently aroused a feeling in the minds of some members of the medical profession that the interests of both patient and student are neglected by the authorities of the Boston Lying-in Hospital and by the Obstetric Department of the Harvard Medical School.

Although entirely ignorant of the facts and without trying to learn them, the writer of the editorial suggests that the conditions which exist contribute largely to the maternal and fetal mortalities for which Massachusetts has been criticized, and he seems to believe that these mortalities would be very much lessened if, first, a trained nurse attended all cases on the District with the extern, and, second, if students were given an opportunity to deliver several cases under supervision in the wards of the Hospital before being sent on the District.

The supposition that the conditions in the Out-Patient Department of the Boston Lying-in Hospital contribute largely to either maternal or infant mortality could hardly have been entertained if the writer of the editorial had taken any trouble to ascertain the facts. The following figures are taken from the reports of our Out-Patient Department for the last two years.* During these two years, 2628 women were cared for in the Out-Patient Department of the Boston Lying-in Hospital. Of these, 31 were transferred to various hospitals for various complications arising either during labor or during the convalescent period. Two of these patients died, one of pneumonia and the other of operative shock. Two deaths in over 2600 patients are regrettable, but can hardly be considered a serious mortality, and neither of these could be attributed to any act of an extern or to absence of a trained nurse. 2644 babies were delivered during the same period. Among those there were 102 stillbirths, 67 of which were either non-viable or were macerated. Six stillbirths occurred before the arrival of the extern and 5 were

*1925 and 1926. The figures for 1927 were not available when this was written.

due to asphyxia following prolapse of the cord, the cord being prolapsed and pulseless at the time of the arrival of the extern in answer to the first summons. Syphilis was the cause of the stillbirths in 2 cases and there was one monster and one case of premature separation of the placenta. The other 20 stillbirths were due to intra-uterine asphyxia, resulting either from some difficulty in delivery, or interference with the circulation of the child during an apparently normal labor. It is possible that some of these babies might have been saved if the patient had been in a hospital under the immediate care of an expert obstetrician, who was equipped to interfere at the first sign of failure of the fetal heart, but the figures of any lying-in hospital will show as large a proportion of stillbirths as this, even under the best conditions. It would seem therefore fair to assume that the interests of the patients were not seriously injured by the system criticized. The remainder of the babies were born alive and although some of them died during the convalescent period, or were transferred to various hospitals for special care, the care received at the time of birth cannot be held responsible.

I fail to see where the presence of a trained nurse at the time of delivery would have altered this mortality greatly. Of course, it is fair to say that the patients cared for in the Out-Patient Department of the Boston Lying-in Hospital are, in the main, a hand-picked group. Every patient who applies for care in the Out-Patient Department is studied in the pre-natal clinics, and all patients who present any abnormality, present or past, which renders them poor risks are referred to the Hospital for care and are not taken care of in the Out-Patient Department. A few of them, however, refuse to go to the Hospital and some cases send for help in emergencies, who have not been under our charge during pregnancy, but as far as we can select cases, our Out-Patient Department contains only patients who have been carefully examined and pronounced safe for delivery at home. Furthermore, through the coöperation of the Community Health Association, a nurse is furnished to any patient at any time for 24 hours, including the labor, if the patient so desires, and daily visits are made on each patient by the nurses of the Community Health Association throughout the convalescent period. If the patient does not care to have a nurse at the time of delivery, we do not force one on her, but she can have one if she so desires. The criticism that there should be a trained nurse present on all cases, we believe to be without foundation.

Our externs are not sent on the District unsupervised. There are various regulations which they must live up to, and a graded consultation, reaching from the House Officer through the Out-Patient staff to the Visiting Obstetrician, can be obtained on short notice for any patient, and the Hospital always stands ready to receive patients judged to need hospital care.

Instead of being a clinic which contains 88% of normal patients, it is as nearly 100% normal as we can make it. Twenty possibly preventable stillbirths in over 2500 cases show that the babies are not sacrificed at the time of delivery. The deaths which occur after delivery in the two weeks' period can not, in any way, be prevented by nursing care at delivery. So much for the patients' standpoint.

In sending our externs to care for patients in childbirth, without a trained attendant, we believe that we are doing more in the education of the student in self-reliance and in other qualities which will be of great value to him in the future, than could be accomplished in any other way. He learns how to get ready for an emergency case, he learns that labor is a normal process in normal women in the vast majority of cases, and he learns to depend on himself under somewhat trying circumstances, although he knows that he can obtain help or advice at any time. He must report progress to the House Officer in charge of the District at specified intervals. If he fails to report, the reason is investigated. If he were there with a trained nurse on whose experience he would rely, he would miss one of the greatest developmental factors of his medical education. In other clinics, the work is conducted differently, but in our clinic it has been conducted in this way with steady improvement in supervision for many years and we see no reason to change.

In regard to the criticism that he should be given an opportunity to deliver several cases under the best conditions in the Hospital, before going on the District, there may be a fair difference of opinion. An opportunity is offered to every student to see cases delivered in the Hospital as well as on the District before he goes on duty, and he is supposed to do so. A large proportion of the students take advantage of this opportunity; some, as will always happen, put off doing so until shortly before their time of service and then find that there are no cases in labor in the Hospital during the time that they can devote to observation. This cannot be entirely avoided, but every man is supposed to see cases delivered before going on the District, and many do see from five to ten cases.

We believe that the best system of education for students, and as far as possible we carry it out, is first to see cases delivered in the Hospital and on the District before going on service, and then to serve their term in the Out-Patient Department acting merely as men midwives under careful supervision, but on their own responsibility. They thus learn what normal labor means and learn self-reliance. During the fourth year, each student spends a month in intensive obstetrics, and during that month he is given an opportunity to deliver cases in the Hospital under supervision as far as the number of cases will permit, and to see abnormal labor and obstetric operations, thereby enlarging his field of vision and correcting any early errors of technique which he may have acquired on the District, and thus come to the realization that obstetrics is more than mere midwifery and is a surgical specialty when properly conducted. We do not pretend to educate the students to be obstetricians in the time allowed. We do pretend, however, to so teach the students that if they desire to be obstetricians, they realize that further education is necessary before they can attain their end. A somewhat extensive experience in teaching our own students, in investigating methods of procedure in other clinics, and in examining students under the auspices of the National Board of Medical Examiners, leads me to believe that it will take more than an academic discussion based on ignorance of the facts to change our system, although we all admit it may be open to improvement.

Very truly yours,

FRANKLIN S. NEWELL,
*Professor of Clinical Obstetrics,*
*Harvard University.*

## A CORRECTION OF AN ALLUSION TO SERVETUS

*To the Editor of the* NEW ENGLAND JOURNAL OF MEDICINE:

Dear Sir:—

I note in your edition of May 10th, on page 650, under the heading "Boston Medical Library," that Servetus was burned at the stake in Geneva because of his observations on the pulmonary circulation. I regret such a statement should have been made, for it is always unfortunate to put into circulation errors that are apt to be handed on until they are taken to be truths.

Years before the appearance of the Christianismi Restitutio in 1553 Calvin had written to Farel "I will not pledge my faith to him; for did he come (to Geneva) if I have any authority I should never suffer him to go away alive."

It was not a question of medical discovery, but a question of long standing pronounced heresy which was the complaint against Servetus. As early as 1531 he had written De Trinitatis Eroribus. Again in his little pamphlet Apologetica Disceptatio pro Astrologia he had written in favour of Astrology which was disturbing alike to the medical and clerical profession, and now comes in 1553 the Christianismi Restitutio. The Roman Catholics had arrested him in Vienne and thrown him into prison. On escaping from this he found the Protestants of Geneva no less incensed with his writings and so the stake became his fate—a common fate to all heretics in the 16th century. The charges against him were under ten separate heads, the two most important of which relate to his views on the doctrine of the Trinity and Infant Baptism. "The Christian Church early found out that there was only one safe way of dealing with heresy. From the end of the 4th century, when the habit began, to the climax on St. Bartholomew's day, it was recognized universally that only dead heretics ceased to be troublesome." As to his discovery, Osler goes on to say—"in possession of a fact in physiology of the very first moment Servetus described it with extraordinary clearness and accuracy. But so little did he think of the discovery, of so trifling importance did it appear in comparison with the great task in hand of restoring christianity, that he used it simply as an illustration when discussing the nature of the Holy Spirit in his work Christianismi Restitutio." (See Sir William Osler, *Johns Hopkins Hospital Bulletin*, Vol. XXI, No. 226, January, 1910.)

HENRY BARTON JACOBS.

11 Mt. Vernon Place, Baltimore.
May 17th, 1928.

## NEWS ITEMS

APPOINTMENT OF DR. LOUIS E. PHANEUF—Dr. Louis E. Phaneuf, No. 270 Commonwealth Avenue, Boston, has been apointed Gynecologist and Obstetrician-in-Chief at the Carney Hospital.

CAMPAIGN NOTES OF THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER—NOTICE OF REMOVAL—Friends of the Society who come to visit the headquarters in the 17th floor of 25 West 43d Street should note that since May 1 of this year the office has been located on the 15th floor of the building at that address.

The headquarters have gradually become crowded and less convenient than they were three years ago when the Society moved to the present building. The Society's income, and consequently the volume of its work, were much less then than now.

In the new offices there will be room for the regular meetings of the Executive Committee which take place every month, and for such special committee meetings as may be necessary. There will be a library, a nucleus of which already exists and which it is hoped will in time become one of the most helpful collections of literature on cancer to be found anywhere. There will be a more adequate store room and shipping room where the large amount of printed material which the Society prepares and distributes to all parts of the United States will be handled.

A cordial welcome will await visitors at the new headquarters.

APPOINTMENT OF DR. J. W. COX, NEW FIELD REPRESENTATIVE—On March 1, Dr. John W. Cox assumed the duties of a Field Representative of the American Society for the Control of Cancer, sharing that title with Dr. R. V. Brokaw.

Dr. Cox, who was born in 1883, is a graduate in medicine of the University of Syracuse and has had much training and experience in public health work. For the last three years he has been a field investigator of the Bureau of Social Hygiene. Before that he spent six years in the United States Public Health Service, being health officer of a demonstration county until the completion of that work.

Dr. Cox has had the advantage of considerable laboratory experience. He has been Instructor in Bacteriology and Pathology of the College of Medicine, Syracuse University, and Professor of Pathology, Bacteriology and Health at the University of North Dakota. From 1914 to 1917 he was Acting Director of State Health Laboratories of North Dakota, with divisions of Pathology, Sanitation, Child Welfare, Epidemiology and Nursing.

As Health Officer of Demonstration at Arlington County, Virginia, Dr. Cox worked for the Virginia State Board of Health, the U. S. P. H. S., the Rockefeller Foundation and the local board of health jointly. During the war, he was a captain in the Medical Corps of the United States Army. He is a member of the Southern Medical Association and the American Public Health Association. His home is in Alexandria, Virginia.

As has been customary with the other Field Representatives of this Society, Dr. Cox is beginning his service by taking an intensive course of training in cancer at the Memorial Hospital, New York, in preparation for his work in various parts of the country where he will go to assist the State Chairmen.

## NOTICES

FIFTH INTERNATIONAL MEDICAL CONGRESS

The fifth International Medical Congress for Industrial Accidents and Occupational Diseases will be held in Budapest, Hungary, September 2nd to 8th, 1928, under the patronage of H. S. H. Nicholas Horthy de Nagybánya, Regent of Hungary; Joseph Vass, D.D., Minister of Social Welfare and Labour; Maximilian Herrmann, Minister of Commerce; John Mayer, Minister of Agriculture; Honorary Presi-

dents, Emery Drehr and Cornelius Scholtz, Secretaries of State in the Ministry of Social Welfare and Labour, Francis Ripka, Lord Mayor of the City of Budapest, Eugene Sipöcz, Mayor of the City of Budapest.

All those who are engaged in the subjects to be discussed, are cordially invited to attend.

PROF. TIBERIUS GYÖRY,
*Under Secretary of State, Chairman of the Organization-Committee.*
PROF. TIBERIUS VEREBELY,
*Professor at the Pázmány Péter University of Budapest, Chairman of the Executive-Committee.*

## UNITED STATES CIVIL SERVICE EXAMINATIONS

The United States Civil Service Commission announces the following open competitive examinations:

Physiotherapy Aide
Physiotherapy Pupil Aide

Applications must be on file with the Civil Service Commission at Washington, D. C., not later than June 23, 1928.

Assistant Medical Officer
Associate Medical Officer
Medical Officer
Senior Medical Officer

Applications will be rated as received, by the U. S. Civil Service Commission at Washington, D. C., until June 29, 1928.

There is especial need for medical officers qualified in tuberculosis or neuropsychiatry.

## UNITED STATES PUBLIC HEALTH SERVICE

Surgeon L. L. Lumsden has been directed to proceed from Washington, D. C., to Providence R. I., and to such other places in the State of Rhode Island, and return, to confer with State and local health authorities concerning the establishment of county health units. May 11, 1928.

# REPORTS AND NOTICES OF MEETINGS

## THE HARVARD MEDICAL SOCIETY

The final meeting of the Harvard Medical Society for the school year was held on May 22, 1928, at 8:15 o'clock in the Peter Bent Brigham Hospital amphitheatre. Because of a full program no cases were presented. Dr. Samuel A. Levine presided.

The first paper, entitled "Observations on the treatment of so-called nephrosis," was presented by Dr. M. H. Barker. Only recently has the condition called nephrosis been separated from chronic nephritis with edema, and called a clinical entity. Dr. Barker pointed out several differential features of nephrosis. Marked edema occurs, frequently with pleural effusions, but with few other signs. Second, there is oliguria, the urine being cloudy, of high specific gravity, and with enormous quantities of albumen in it. The sediment contains few or no cells, and the fat is doubly refractive. Third, there is on the whole a normal renal function. Fourth, the blood picture is upset. The total blood protein is low, the albumen-globulin ratio being reversed, with the albumen lower. The blood cholesterol goes up to a 15-500% increase showing a high fat content. The blood calcium is low. Fifth, the basal metabolism is low, ranging from a negative 15 to a negative 35. A fatty degeneration of the convoluted tubules is seen rather than a general inflammatory response, showing the condition to be caused or associated with a general metabolic upset.

In the treatment of these cases three different diets were tried. A low protein diet gave no improvement. A standard diet of restricted salts and fluids gave only a little improvement. Epstein's diet of low fats and high proteins did the most good. In an attempt to raise the metabolism thyroid extract was given. In the main it had no effect except when the dosage went above a certain level nausea and vomiting resulted. In one case intravenous thyroxin was tried and the metabolism came to normal, but subsequently returned to its original low level. The assumption was that the lack of response to the oral administration of thyroid was due to non-absorption by the edematous intestine.

In attempting to relieve the edema the ordinary diuretics were of little use, the urine not being increased in amount nor the edema lessened. Calcium chloride and ammonium sulphate had some effect. Since mercurial diuretics are injurious to the kidney, only novasurol was tried, and this with extreme care. Saligen, a new German diuretic, gave good diuresis without signs of renal irritation. Since it works best in the presence of an acid-forming radical, ammonium nitrite was given. With this treatment all the edema was removed.

Dr. Barker summarized his paper by stating that nephrosis must be considered as a clinical entity, and that it is best treated with a high protein and low fat diet with saligen medication.

The second paper of the evening was presented by Dr. Marshall N. Fulton, who spoke on the effect of quinidine sulphate on ventricular tachycardia and ventricular fibrillation. Cases of ventricular tachycardia are very rare, as only twelve cases have occurred in the many thousands of admissions to the medical service of the Peter Bent Brigham Hospital. In most of these cases it has occurred in combination with coronary thrombosis. The mechanics are probably that of a circus movement, similar to that in auricular flutter. The therapeutic effects of quinidine are to slow conduction and to prolong the refractory phase of the heart muscle. The second action predominates. In the series of twelve cases quinidine produced the normal sinus mechanism in eight, and slowed the heart in two. The dose was variable and oftentimes large (up to 1.5 grams every 24 hours) and in certain cases had to be continued for a long time.

Attempts were made to find out the effect of quinidine in experimental animals. Ventricular fibrillation was produced in cats by the intravenous injection of Oubain, a strophanthin mixture. Quinidine had no effect on the fibrillation. The objections to these experiments are obvious: first, the toxic substance producing the fibrillation is always in the blood; second, the large doses of quinidine needed depressed the respiration and affected the heart muscle *per se*. Induction currents were then tried. Quinidine inhibited the initial ventricular tachycardia, but had no effect on the final fibrillation. The

same experiments were tried on dogs with similar results.

In conclusion Dr. Fulton stated that so far experimental work has given us no help in the use of quinidine for the treatment of ventricular tachycardia in patients, other than what is already known.

The final paper was presented by Dr. John Powers, who discussed the experimental production of mitral stenosis. Dr. Powers pointed out that two operations have been performed for the removal of part of the mitral valve in cases of mitral stenosis. Both of these operations were technically successes, but the patients died six days later of congestive failure.

Mitral stenosis has been produced before in various ways. In these dogs it was begun by cauterizing the valve. At the end of the operation a systolic murmur was always present, but in only one of the eight dogs used did a diastolic murmur develop. On the second day after the operation pure cultures of either streptococcus viridans or streptococcus cardioorthitides (the supposed etiological agent of acute rheumatic fever) were inoculated and again on the fourth day. Within 12 hours after this, minute vegetations appeared on the cauterized valve, gradually increasing in size. Blood cultures were positive for two days and the animal gave the picture of vegetative endocarditis. If death did not occur from the acute regurgitation produced, and if the animal set up an immunity against the organisms, a thick stenosed valve was the final result. The total operative mortality was 40 per cent.

Dr. Powers summarized by stating that cauterization and subsequent bacterial inoculation will produce a mitral stenosis if the animal doesn't die.

## THE MASSACHUSETTS CENTRAL HEALTH COUNCIL, MAY 22, 1928

The first meeting of the Massachusetts Central Health Council, recently reorganized, was held Tuesday, May 22, at 5:30 P. M., at the Twentieth Century Club, 3 Joy Street, Boston.

The agencies composing the new Council are: American Society for Control of Cancer, Dental Hygiene Council of Massachusetts, Massachusetts Associations of Boards of Health, Massachusetts Association of Directors of Public Health Nursing, Massachusetts Department of Public Health, Massachusetts Medical Society, Massachusetts Society for Mental Hygiene, Massachusetts State Nurses' Association, Massachusetts Tuberculosis League, Massachusetts Veterinary Association, and the New England Heart Association.

Over 40 representatives were present and participated in the business meeting, at which new officers were elected for the balance of the calendar year. These are: President, Dr. Henry B. Elkind, Medical Director, Massachusetts Society for Mental Hygiene; Vice-President, Dr. Merrill E. Champion, Director of the Division of Hygiene, Massachusetts Department of Public Health; Secretary-Treasurer, Mr. Frank Kiernan, Executive Secretary, Massachusetts Tuberculosis League; and Auditor, Dr. H. W. Peirce, Massachusetts Veterinary Association.

A dinner meeting followed the business session. This was addressed by Dr. George H. Bigelow, Commissioner, Massachusetts Department of Public Health, and Dr. Warren F. Draper, Assistant Surgeon General, United States Public Health Service.

Dr. Bigelow, in discussing his topic "Are There Any Unsolved Problems?" offered a host of problems still unsolved in the field of public health, ranging from the control of communicable diseases up to the problem of licensing public clinics. Dr. Bigelow expressed his belief that the Massachusetts Central Health Council had an important function in the health work of the State, and he suggested that there were two things the Council could take up during the coming year: first, it could draw up a code of ethics in regard to the field of social medicine; and second, it could study the problem of rural health service for communities of 10,000 or less.

Dr. Draper gave a brief review of accomplishments through coöperation in the field of public health, and said that the city, the county, the state, and the nation as a whole has benefited from this method of handling public health problems.

## ANNUAL MEETING OF THE HAMPSHIRE DISTRICT MEDICAL SOCIETY

The annual meeting of Hampshire District was held Wednesday, May 2. Dr. J. G. Hanson offered the following resolution: "Resolved that the Hampshire District Medical Society indorse the principle of a Cost Rate for hospital care and a Paid Medical Service for all patients protected by insurance against injury or sickness, in all hospitals maintained in part by income from endowed charity or annual charity subscriptions; and that this society instruct the Councillors from this District to use their best efforts to secure concerted action by the Council of the State Society to make these principles effective." This resolution was seconded and voted approved.

The following Fellows were elected officers:

President: Dr. Francis E. O'Brien, Haydenville.

Vice-President: Dr. Lucius Beverly Pond, Easthampton.

Secretary and Treasurer: Dr. Luther O. Whitman, Northampton.

Librarian: Dr. Frank H. Smith, Hadley.

Councillors: Dr. E. D. Williams, Easthampton; Dr. A. J. Bonneville, Hatfield; Dr. J. G. Hanson, Northampton.

Commissioner of Trials: Dr. William Peckham Stutson, Cummington.

Censors: Dr. A. J. Bonneville, Hatfield, Supervisor; Dr. C. H. Wheeler, Haydenville; Dr. J. D. Collins, Northampton; Dr. O. W. Cobb, Easthampton; Dr. N. C. Haskell, Amherst.

Councillor for State Nominating Committee: Dr. J. G. Hanson, Northampton; Dr. A. J. Bonneville, Hatfield, Alternate.

Dr. Chester T. Cobb, the retiring president, gave an address on the subject of Cancer and the need for the establishment of a proper clinic in Hampshire County, using Dickinson Hospital as a base.

LUTHER O. WHITMAN, *Secretary.*

## THE TRUDEAU SOCIETY

The next meeting of the Trudeau Society of Boston will be held on Monday evening, June 4, 1928, at 8:15 P. M., in John Ware Hall, Boston Medical Library, 8 The Fenway, Boston.

The speaker will be Dr. Evarts A. Graham of

St. Louis; subject: "Remarks on Pulmonary Suppuration."

Physicians, medical students and nurses are cordially invited to attend this meeting.

RANDALL CLIFFORD, *Secretary.*

## MASSACHUSETTS SOCIETY OF EXAMINING PHYSICIANS

ANNUAL MEETING—ELECTION OF OFFICERS

The Copley-Plaza Hotel
Friday, June 1, 1928, 6:30 P. M.
Dinner $2.50 per plate

PAPERS

1. The Treatment of Major Traumatic Emergencies, Dr. Charles C. Lund, Boston City Hospital. Discussion opened by Dr. Arthur W. Allen, Massachusetts General Hospital, and Dr. Thomas E. Chandler, Massachusetts Homoeopathic Hospital.

2. Acute Asphyxia, Dr. Cecil K. Drinker, Harvard Medical School. Discussion opened by Dr. Francis D. Donoghue, Massachusetts Industrial Accident Board.

Dr. Sylvester will speak briefly on the new legislative bill concerning the registration of physicians.

C. P. SYLVESTER, M.D., *President.*
W. P. COUES, M.D., *Secretary.*

## SOCIETY MEETINGS

**May 31, June 1-2**—American Society for the Study of the Feebleminded. Detailed notice appears on page 781.

**June 1**—Massachusetts Society of Examining Physicians. Detailed notice appears above.

**June 4**—The Trudeau Society. Detailed notice appears on page 782, issue of May 24.

**June 7**—Boston Dispensary. Complete notice appears on page 782, issue of May 24.

**June 18-20**—Meeting of the American Association for the Study of Goiter. See page 425, issue of April 12, for complete notice.

**June 18-22**—Convention of the Catholic Hospital Association. Complete notice appears on page 1597, issue of February 16.

**December 3-7**—Radiological Society Convention. Detailed notice appears on page 712, issue of May 17.

# BOOK REVIEWS

*Pneumothorax & Surgical Treatment of Pulmonary Tuberculosis*, by CLIVE RIVIERE, M.D. (Oxford Medical Publications.)

This is not a book for the general practitioner but for the specialist who employs artificial pneumothorax treatment. He devotes seven chapters to other forms of surgical treatment of pulmonary tuberculosis such as Thoracoplasty, Extrapleural Pneumolysis (Apicolysis), Phrenic Evulsion or Exariesis (Phreniocotomy), and Cavity Drainage. To these chapters, however, he devotes only little space realizing that it is strictly the work of the thoracic surgeon, devoting his attention only to indications for the above operations. The main theme of the book is devoted to artificial pneumothorax. He stresses each step in the operation in a rather lengthy manner, emphasizing very carefully each progressive step. He quotes very freely the experiences of other writers and refers frequently to the work of the Matson brothers of Portland, Oregon.

The only exception one can take to this book is the degree of compression the writer recommends. He advocates rather high intrapleural pressures. It has been the custom in this country to use lower intrapleural pressures and have more frequent refills. The incidence of pleural effusions complicating artificial pneumothorax seems to be thereby lessened. He devotes a chapter on Oleothorax and one on Pneumothorax in Childhood, both procedures practised very little in this country.

On the whole, however, the book is to be highly recommended, the style very lucid and sprightly and the specialist in pneumothorax treatment will find a careful presentation of the subject in little space by an authoritative and experienced worker in the field of pulmonary tuberculosis.

*Handbook for The Medical Soldier*, by ARNOLD DWIGHT TUTTLE, Major, Medical Corps, U. S. Army. William Wood & Co. New York. 1927.

Although scarcely exceeding a pocket edition in size, this compendium is so extensive that it includes such widely divergent subjects as harnessing a horse, the anatomy of the human brain and foreign currency valuations. In fact, it is a comprehensive presentation of all the basic knowledge supposedly possessed by enlisted men in the Medical Department. A foreword written by The Surgeon General supplies the following note concerning the author: "the Author's extensive service, broad experience, and general knowledge have peculiarly fitted him to compile a work of this character. He has lived and knows the life of the enlisted men for whom he is writing. He never overlooks an opportunity to champion their cause, to promote their contentment, and to improve their prospects."

*Textbook of Operative Obstetrics*, by PROFESSOR DR. GEORG WINTER, Königsberg, in collaboration with Prof. Dr. W. Benthin, Königsberg and Prof. Dr. H. Naujokes, Marburg; Berlin and Vienna: Urban and Schwarzenberg, 1927.

This volume, which is the outgrowth of the author's lectures and contributions for the past twenty-five years, constitutes a very comprehensive treatise for physicians and students. It includes not only the classical procedures of operative obstetrics, but also therapeutic abortion, the treatment of miscarriage, primary plastic repair, and foetal injuries. It is illustrated with eleven tables and with 228 figures, some of which are in two colors. It may be taken to represent the operative technic and practice of the Königsberg and Marburg Clinics.

*The Peaks of Medical History*, by CHARLES L. DANA, A.M., M.D., LL.D. Second Edition. New York, Paul B. Hoeber, Inc., 1928.

The first edition of this noteworthy outline of the evolution of medicine was reviewed in the JOURNAL with enthusiastic approbation, which has been confirmed by the speedy demand for a reprinting. In this second edition no special change is made, except the correction of a few minor inaccuracies and the addition of several new illustrations, of which there are now forty-three full-page plates and sixteen in the text. It is earnestly to be hoped that in the near future Dr. Dana will fulfill the suggestion "to expand his story"; since of him as well as of Dr. Garrison, to whom the work is dedicated, it may be said that he is "*bonis literis haud leviter imbutus*".

*Clinical Researches in Acute Abdominal Disease.* ZACHARY COPE, B.A., M.D., M.S. (Lond.), F.R.C.S. (Eng.); Hunterian Professor and Sometime Arris and Gale Lecturer, Royal College of Surgeons. Second Edition. Oxford University Press. London. 1927.

Every clinical case is regarded by the author as being an experiment of nature, and it is the duty of the clinician to observe the conditions of the experiment as closely as he can. The rules or conditions which should be observed in clinical research of this nature are enumerated as follows:

"First. There must be accurate observation of the facts of each case investigated. Without accurate data no generalization can or should be attempted. There is a natural tendency to put on record those facts which the observer expects, but to slur over points which apparently have no direct bearing on the question at issue.

"Second. No generalization should be attempted until a considerable number of cases has been investigated.

"Third. So soon as possible a working hypothesis as to the meaning of certain symptoms should be adopted tentatively. Merely to record symptoms becomes monotonous and unfruitful unless the mind conceives some meaning in them.

"Fourth. The working hypothesis must be rigidly tested by succeeding cases. One must be ready to sacrifice the most inviting theory if the balance of evidence is against it. It is here that the clinician often fails.

"Fifth. In any clinical research all accessory means of investigation should be utilized."

The spirit of quantity production is reflected in medical writing not only in total volume output, but unfortunately also in subject matter. There is in many quarters such a wild scramble for a large "series" of cases that too little reasoning is based on the individual patients as single experiments of nature. It is comforting to learn from this scholarly thesis that the careful observation of the individual patient must remain the starting point for constructive clinical thought. Statistics of end-results may be compiled by the office stenographer—but a contribution such as Mr. Cope has made will always remain the fruit of a wide clinical experience and a keenly observant intellect.

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*The Medical Department of the United States Army in the World War.* Volume II, Administration American Expeditionary Forces. United States Government Printing Office: 1927, pp. 1123.

This, the second volume of the medical part of the World War Series, "Considers only the more important administrative activities of the Medical Department of the American Expeditionary Forces, for the scope of these and their ramifications were such as to preclude, in the space available, a more thorough discussion."

The volume is profusely illustrated, and is divided into six sections as follows: Section I, The Organization and Administration of the Chief Surgeon's Office; II, The Medical Activities of Territorial Sections; III, Hospitals, including base and camp hospitals; IV, Evacuation of Patients to the United States, Discontinuance of Hospitals; V, The Army of Occupation in Germany, and finally Section VI, Medical Department Activities, American Forces in France. Readers will also find much of general medical interest in the appendix, which should not be skipped.

In the section on base hospitals the account of the New England Units will be especially interesting to readers of this JOURNAL.

At the end of August, 1918, there were abroad, 75,000 beds in base hospitals, some 50,000 being occupied, and allowing 15 per cent. of hospitalization for the American forces over-seas; many more would be needed had the war been much prolonged. As it was, at the end of September, 1918, the total fixed hospital capacity was over 148,500 beds, nearly 80,000 being occupied.

These figures, together with the many and varied illustrations, including those of hospital trains and their interiors, disinfecting plants, field laboratories, and many hospital centers, do much to give the reader some idea of the enormous scope of the work which those who were not there at the time, can form no conception of without reading this volume of the series.

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## BOOKS RECEIVED FOR REVIEW

*Health and Wealth* by Louis I. Dublin. Published by Harper & Brothers. 361 Pages.

*The Ultra-Violet Rays* by Arnold Lorand. Published by The F. A. Davis Company. 258 Pages.

*Studies in the Psychology of Sex* by Havelock Ellis. Published by The F. A. Davis Company. 539 Pages.

*The Surgical Clinics of North America.* Published by W. B. Saunders Company. 467 Pages.

*Gonococcal Urethritis in the Male* by P. S. Pelouze. Published by the W. B. Saunders Company. 357 Pages.

*The New York Academy of Medicine. Lectures on Medicine and Surgery.* Published by Paul B. Hoeber, Inc. 319 Pages.

*The Mind of the Growing Child,* edited by Viscountess Erleigh. Published by the Oxford University Press. 229 Pages.

*Biological Monographs and Manuals* by R. A. Fisher, Sc.D. Published by Oliver and Boyd, Edinburgh. 269 Pages.

*A Manual of the Practice of Medicine* by A. A. Stevens, M.D. Published by W. B. Saunders Company. 657 Pages.

*A Text-book of General Bacteriology* by Edwin O. Jordan, Ph.D. Published by W. B. Saunders Company. 778 Pages.

*Principles and Practice of Obstetrics* by Joseph B. DeLee, A.M., M.D. 1140 Pages.

*Modern Practice of Pediatrics* by William P. Lucas, M.D., LL.D. Published by The Macmillan Company. 962 Pages.

*Transactions of the American Association of Genito-Urinary Surgeons.* Published by the Williams & Wilkins Company. 347 Pages.

*Traite de Physiologie, Normale et Pathologique,* Tome III. Published by Masson et Cie, Editeurs, Paris. 751 Pages.

*Traite de Physiologie, Normale et Pathologique,* Tome IV. Published by Masson et Cie, Editeurs, Paris. 585 Pages.